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AUGUST 1954

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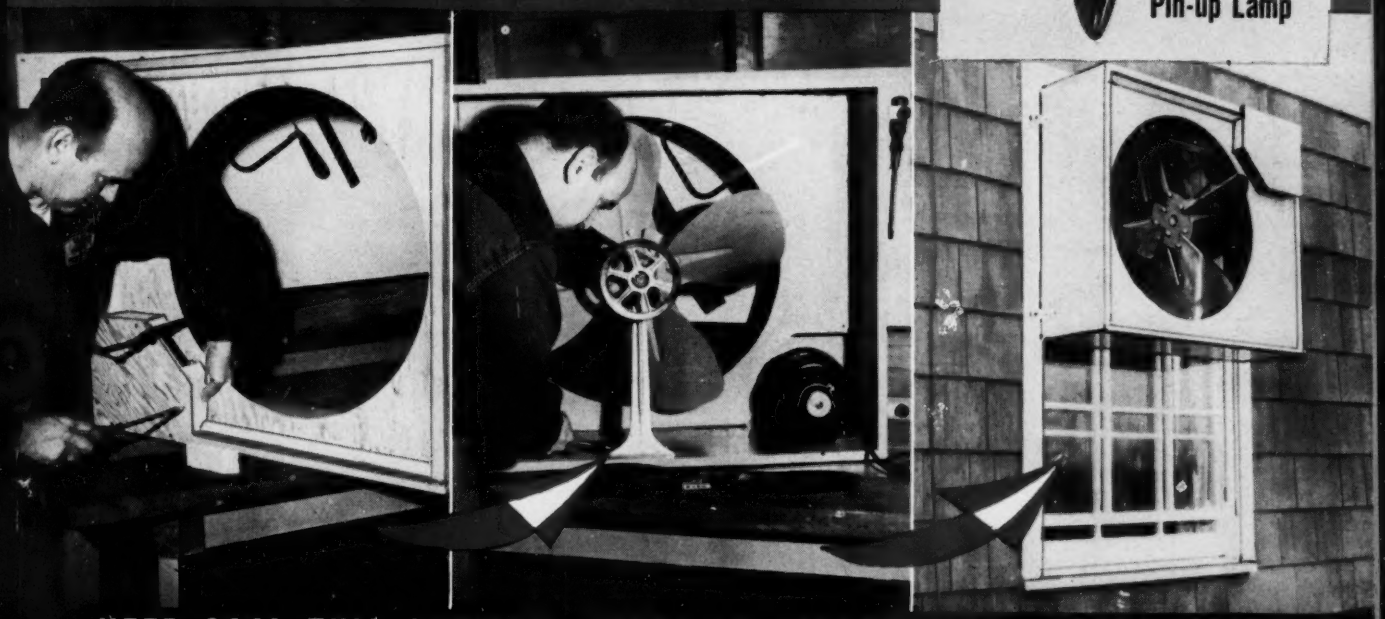

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Homecraft AND THE HOME OWNER

Volume 24 No. 6
Whole No. 152

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Our 24th Year

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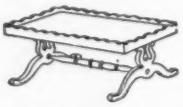

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22 Full-Size Patterns LAWN NOVELTIES

Easy to make from scrap lumber. Simply trace the full-size patterns on wood and start sawing. Plans give color schemes, full instructions. 22 patterns **$1.50**

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Outstanding outdoor decoration for Holiday Season. Stand "Old Claus" beside evergreen or near front entrance, put spotlight on him and you'll have something your family, neighbors will admire. Pattern is full-size, ready to use. **$1.00**

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Very unusual Christmas lawn decoration, and very colorful too. Old Santa is painted in bright colors and the baby deer (about 2 ft. high) are painted pastel blue, green, yellow and pink. Easy to make from plywood; using full-size patterns furnished. **$1.00**

CRAFTPLANS 1321 S. Michigan Ave. Dept. P-243 Chicago 5

FAMILY FUN FOR SALE!

Here's your **complete** fishing outfit—278 pieces of Nationally-Advertised fishing tackle . . . featuring the brand-new "KOLLAPSIBLE" five-foot fiberglass rod, and the famous Pflueger jeweled-bearing, diamolite reel . . . all at a **saving** of $16.55 from the regular price of $49.50!

You old-timers will recognize every famous name in this kit. And you beginning fishermen (and fisherwomen) will know you're starting out with quality tackle. You **can not** duplicate our price by buying the pieces separately. Now, you can fish **right**—at a price you'd pay for odds and ends of inferior tackle. We positively guarantee every item in this kit.

About your rod and reel. Here's the **heart** of any fishing outfit . . and **you** get what many fishermen **wish** they had, but haven't previously felt they could afford. You get the brand new KOLLAPSIBLE rod as part of your outfit. Here's a rod with a **three-piece** tip. **It fits in your tackle box!** The ferrules are of **machined brass** with precision fit. The handle is a real dandy, made of aluminum, highly polished, with a jawed chuck. The Nylon windings are multicolored, beautifully-wound and varnished. The guides and tip-top are extra smooth polished stainless steel. The rod sections are of perfectly-tapered, milky-white fiberglass, with scientifically-balanced "whip." Your Pflueger reel is precision-made—a beauty. The bearings are jeweled, with tension oil cups. Level wind, of course, with that "hum" only a good reel gives. We pay shipping charges. Complete..... **$32.95**

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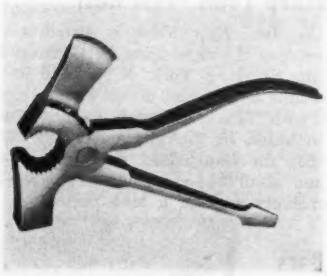
Pictured above is all the tackle you'll ever need to catch fish: Pflueger Reel, as described; 5-foot KOLLAPSIBLE Glass Rod, 3 sections, as described; All Metal Tackle Box, sturdily-built, with lock; 50 Yards Shakespeare Wexford Casting Line, Nylon, Waterproofed; Hunting-Fishing Knife with Leather Sheath; 4 Nationally-Advertised Baits; 2 South Bend Plugs; 2 Creek Baits; Pflueger June Bug Spinner; Pflueger Last Word Wobbler; Pflueger Colorado Spinner; Pflueger Takit Spinner; Pflueger Feathered Spoon; Red and White Spoon; Copper Spoon; 6 Pflueger Snelled Hooks; 3 Pflueger Cable Wire Leaders; Pflueger Rod Varnish; Pflueger Line Dressing; 100 Pflueger Hooks, 50 Pflueger Hande-pak Hooks; 40 Pflueger Ritopak Hooks; 6 Snaps; 6 Swivels; 12 Sinkers; 24 split Shot; Pflueger Gear Grease; 15 Yards Pflueger Nylon Leader Material; Stringer; Scaler; Keystone Fishing Manual; **Enough Tackle For a Lifetime of Fishing Fun!**



EVER WISH YOU HAD JUST ONE FINE TOOL?

If you could **handle** this VERSA-TOOL you'd never be satisfied until you **owned** it. This perfectly-balanced hatchet-hammer-wrench, screwdriver—is **completely** chromium plated. It's the kind of tool you wipe off with a handkerchief after you've used it. Strictly luxury—but it's **tough**, built to outlast every tool in your workshop. Get yours now. We pay postage. Only.....**$4.19**

FAMOUS DELTA FLASHING POWERLITE

You know the name DELTA stands for absolutely top quality. This 1954 Flasher Lantern can be yours for only $6.19. Compare this with the nationally-advertised price. Use your Delta whenever you need a bright long-beam light, set the flasher going to mark your dock when you're boat fishing at night. You'll be safe changing tires with that bright red flasher going too. Battery (available anywhere) is not included. We pay postage. Now **$6.19**

FOR GOOD-OLD LAZY FISHIN'

Here's a **34-piece bamboo fishing outfit**, complete to the last detail. Use it yourself or get a couple sets for the rest of the family. Look what you get: A nine-foot, 3-section, Bamboo Pole; 20 Assorted Fish Hooks; The Keystone Fishing Manual; 3 Pflueger Snelled Hooks; a 5-Piece Furnished Line Set; Fish Scaler; Fish Stringer. All for only.....**$4.19**

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You'll like this "8-in-One" tool. We were crazy about it when we first saw it. We had the manufacturer make up some *special* ones for us—with a finer chrome finish than the regular models. Free with your first order, for any article or kit on this page. It does *eight* jobs—even knife sharpening!

WALTCO SAF-T-SHEATH FOLDING HANDLE HUNT-FISH KNIFE

This wonderful knife measures 8½" open and 6" closed. We think it's the best on the market, **barring none.** The blade is of finest carbon steel, hollow ground. The bright work is finished in gleaming chrome. It's easy to carry in pocket or tackle box. The safety catch holds in both open and closed position. Back of blade is fish scaler. You can cut a toothpick or skin a deer with this knife. Order now. We pay postage, of course. Only **$3.95**

Use this order blank NOW

We pay all shipping costs

Yes. Please send the following. Include my free gift.

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- ☐ Versa-Tool, chrome finished..... 4.19
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- ☐ 34-Piece Bamboo Fishing Outfit.. 4.19

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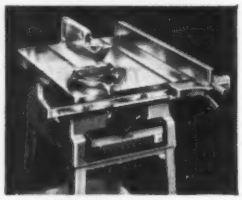

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Here's a NEW 8" tilt/arbor saw built to professional standards for unprecedented accuracy, speed and ease of operation. TEN ALL-NEW FEATURES give performance never before available in an 8" circular saw at or near its low price . . . only $87.50.

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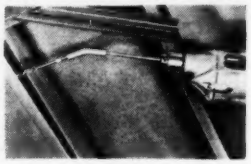
It's New on the Market for the Workshop

Low Cost Wedge Vise

Big holding power at low cost is the claim of the wedge vise (No. 1240) now marketed by Stanley Tools. Fastens to any bench by means of three screws. Consists of heavy gauge steel wedge-shaped base and hard maple block with a "hooked" end for wedging stock into working position. A quick, easy set up for sawing, planing, shaving, chiseling, driving screws, drilling. Price $2.00. Stanley Tools, New Britain, Conn.

Easy-to-Use Angle Drive

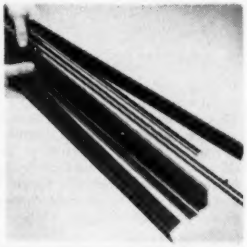


This handy angle drilling adapter makes it easier to reach hard-to-get-at places; cuts drill changeover time to a minimum. Quickly installed between the drill extension rod and any of the 79 standard size drill extension chucks of the Little Beaver line. Beaver extension chucks, correspond to standard drill sizes. For further information write Beaver Tool Co., 622 East Jericho Turnpike, Huntington Sta., L.I., N.Y.

Protects Workshop Tools From Rust

Berlin & Jones Co., Inc., New York is distributing Dry Vapor Packvelopes through John H. Graham & Co., Inc., 105 Duane St., New York, N.Y. Sold in a $2 kit which contains a number of envelope sizes. They are treated with VPI, a chemical vapor phase inhibitor. Also included in the kit is a 12" x 36" sheet of VPI paper for improvised rust-protection uses. All iron and steel objects can be protected from rust inexpensively and for a long period.

Steel Rods and Bars

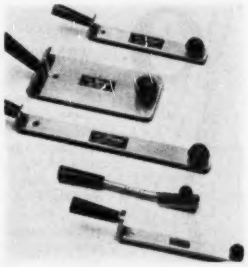


Now the workshopper can go to his local hardware store and buy a handy length and size of round, flat, or angle bar in a variety of lengths and other dimensions. These new steel rods (Redi-Rods) come in handy sizes just right for a hundred and one repair and construction jobs, and in standard lengths that are easy to carry in a car or store in a workshop. Redi-Bolt, Inc., 5334 Indianapolis Blvd., East Chicago, Indiana.

New Kind of Sandpaper

Sand Screen lasts from 7 to 15 times longer than sandpaper, according to the Merchandising Sales Div. of The Carborundum Co., Niagara Falls, N.Y. Its open mesh, resembling window screen, contains numerous small openings. Sanding residue passes through the openings, eliminating clogging and permitting Sand Screen to be used over and over again. Coated both sides with sharp, durable silicon carbide abrasive grain; both sides can be used for sanding.

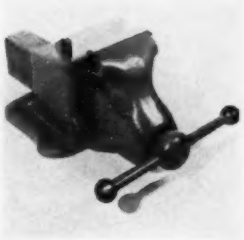
Cushioned Hand Sanders and Filers



Li'l Sharpy, with pressure sensitive adhesive, true-cushion and two hand-hold, presents a sander that reduces sanding fatigue to a minimum, increases cutting action of the paper, extends paper life, gets into corners and small or curved surfaces with ease. The Versatile file and Six-inch file also have hundreds of home applications. Kit of sanders and files, $6.95. Milwaukee File Co., Milwaukee 4, Wis.

It's New on the Market for the Workshop

Vise Jaw Protector Plates



Aluminum plates that convert a regular bench vise into a vise for wood or highly finished metal parts has been introduced by the Robbins Mfg. Co., Dept. O, 1240 S. Prairie Ave., Hawthorne, Calif. Held in place by tempered spring clamps. Soft work pieces may be clamped directly in the vise and held firmly without damage. Plates available in four vise jaw lengths: 2½", 3", 3½", 4". $1.50 per set.

Low-Cost Paint Remover

A radiant-heat paint remover for home and commercial use has been announced by the General Electric Co. Has other uses, including tile laying, furniture refinishing, boat reconditioning, etc. Consists of a Calrod heating element mounted on sturdy steel runners that keep it a safe and constant distance from working surfaces. Weighs 2 lbs., 4 ozs.; rated at 1000 watts, 115 volts. Price $11.95.

New Automatic Torch

Pressure Can Corp., Edgerton, Wis., announces a new low-priced "no pump-no prime" torch. The compact Insta-Lite Torch retails for $4.95; refill cartridges, 59c. It burns a blue-hot pencil-point flame in any position. Quick-connector permits changing throw-away fuel cartridges in six seconds. No pumping or priming is necessary.

New Rubber Sanding Block

Made of special resiliency rubber, this new sanding block is ideal for all types of wood and metal sanding. The cushioned effect increases the aggressiveness of the cutting action of any sandpaper used and increases sandpaper life. Handy Sandy is being marketed by Carborundum's Merchandising Sales Div., and is sold in hardware stores. Information can be obtained by writing to Merchandising Sales Div., The Carborundum Co., Niagara Falls, N.Y.

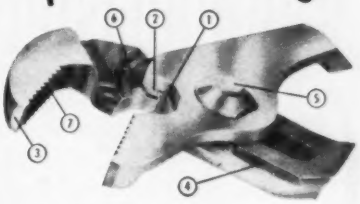
Master Framing Square

A new idea in measuring instruments. Not only incorporates principle calibrations, tables and scales of steel square, but also simplifies and speeds framing while assuring precise marking of materials. Has 24" blade and 16" tongue. Blade has 3" tab at its end, and tongue has 4" tab. The "secret" is in these tabs. A booklet describing this interesting tool also tells its chief uses. Write for free copy to The Gunver Mfg. Co., Manchester, Conn.

Magnified Vision for Close Work

At Western Electric's Kearny, N.J. works, a Magni-Focuser, 3-d binocular magnifier, is used in the mechanical laboratory for reading fine calibrations. Magnified vision in third dimension insures greater accuracy and speeds up precision work. It allows the free use of both hands. Worn with or without eyeglasses. Model makers and craftsmen also find it an aid on close work. Edroy Products, 480 Lexington Ave., New York 17, N.Y.

pliers are busy



here's why

1. Interlocking principle prevents slipping under any load. **2.** New type wide base lugs cannot shear. **3.** New nose design for gripping small objects. **4.** Patented design of tension edge eliminates stress concentration at channels. **5.** Interlocking design minimizes stress on joint bolt. **6.** Precision machined interlocking surfaces result in perfect fit, distributing pressure evenly. **7.** "Rite Angle" teeth guarantee maximum bite and minimum wear.

Look for the Channellock line when you're shopping for hand tools. Channellock pliers offer features that you can't get with other makes. And when you buy a Channellock plier, ask to see the full line—you'll find a style and model to do any job better.

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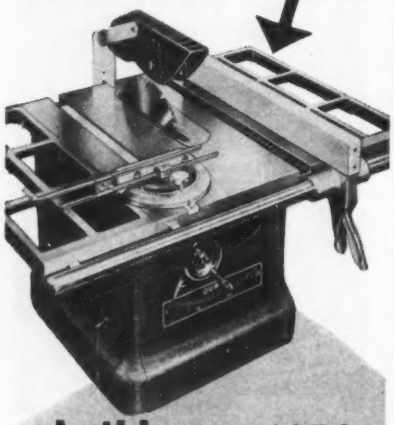


in this new 1954

Woodmaster

8" tilting arbor saw

by Duro

Precision machining, built-in accuracy, ease of operation, ruggedness and safety—plus modern styling—are all a part of this new Duro Woodmaster.

Completely redesigned, from its sturdy base to its massive table—inside and out—to give you quality features at a new low cost. Features that only more expensive saws have been able to provide.

Here are a few:

Has a full 7⅜" ahead of blade; cuts up to 2⅜" at 90°; with extensions table measures 17⅛ x 26"; has new type pistol grip rip fence lock positioned on a round guide bar; hand wheels control blade and tilt; special floating motor mount permits automatic self adjusting belt tension, eliminates belt twist and insures positive drive and longer belt life; plus many other features.

Write for FREE brochure giving full details and specifications on this new 1954 Duro Woodmaster 8" Tilting Arbor Circular Saw.

Duro Metal Products Co.

2662 North Kildare Ave., Chicago 39, Ill.

Duro Metal Products Co.
2662 N. Kildare Avenue, Chicago 39, Illinois

Gentlemen: Please send me full information on your new 1954 model Woodmaster 8" Tilting arbor circular saw.

name .....

address .....

city ..... state .....

It's New on the Market for the Workshop

Marker Cuts Perfect Butt Mortises

A new butt marker for do-it-yourself folks, designed to cut perfect mortises every time in less time, is being marketed by Stanley Tools, New Britain, Conn. Easy to use, the new butt marker has three cutting edges. Available in three sizes for standard butts: 3", 3½" and 4". Wood block permanently fastened in case protects cutting edges of tool. Price $1.50 each.

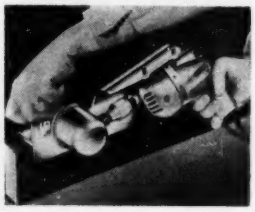
Pistol-Shaped Soldering Torch

The "Torch-O-Matic" torch for soldering, burning, sweating and other jobs, is designed for use with propane gas. A squeeze of the trigger produces a controlled flame, a fine pin-point or a full 6" flame. Pumping, priming, heating and waiting are eliminated through use of the new torch, because ignition is instant on squeeze of the trigger. Complete details from Velocity-Power Tool Co., 201 North Braddock Ave., Pittsburgh 8, Pa.

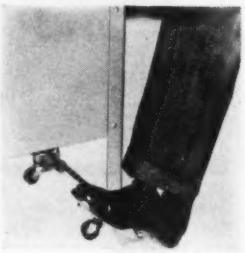
New Woodworking Shop

A new woodworking shop has been announced by Albertson & Company, Sioux City, Iowa. Consists of Sioux 6¼" portable electric hand saw which, in its all-steel saw table, becomes a tilting arbor bench saw with mitre gauge, rip guide and slitter. A full-powered Sioux ¼" electric drill also may be combined with the steel table and drum sander kit to become a stationary drum sander. Third electric power tool is the orbital action, flat sander. $193.20.

Power Planer Attachment



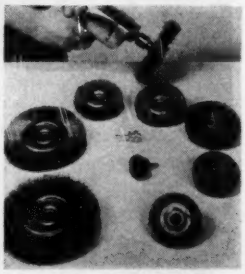
A new power planer attachment which converts any ¼" electric hand drill into a 2" planer has been developed by the Aladdin Mfg. Co., 3125 Harrison Street, Kansas City, Mo. Cutting depth is adjustable from 0" to ¼". The rotary cutter is enclosed in a protective housing, has a 2" cutting surface which is ideal for planing doors, screens, storm windows and edges on cabinet work. Measures 10¼" x 5¾" wide x 5". Retails for $12.95.



Retractable Caster Sets Developed by Delta

Easy-to-install retractable caster sets designed to make most power tools "portable" has been developed by the Delta Power Tool Div. of Rockwell Mfg. Co., Pittsburgh, Pa. Can be installed on all Delta Homecraft tools mounted on steel stands. The casters can be lowered into rolling position by a foot lever. For Deltashop, $12.50; for individual power tool stands, $9.95.

Power Brush Assortment



An assortment of brushes for use on a variety of power tools for polishing, buffing, removing rust, scale, carbon, paint, etc., is offered by Pittsburgh Plate Glass Co. Includes 2", 4", 6" coarse and fine brushes, 4" all-purpose brush, cup brushes, and arbors for use on drill shafts. For details write Pittsburgh Plate-Glass Co., c/o Brush Div., One Gateway Center, Pittsburgh 22, Pa.

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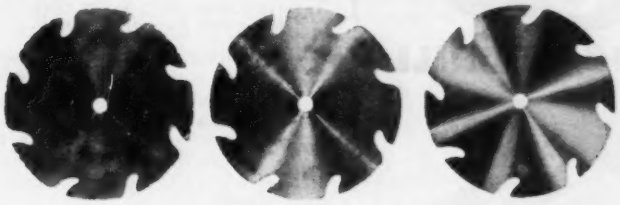
steel rules and tapes • compasses • dividers • calipers • hunting knives
marine and fishing gear • hooks and flies • spark plugs • micrometers
auto parts and accessories • files • taps • dies • golf clubs • any steel tools



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HU-108

FIX IT YOURSELF

By Percy S. Graffam

Associate editor

For FUN PROFIT ECONOMY

You are invited to send your inquiries on home repair problems—Interior and exterior, as well as on items used in the home. They may concern construction, heating, wiring, plumbing, painting etc., and may involve wood, metal, leather, plastic, glass or any other material. All inquiries will be answered as promptly as possible, either in this column or by personal letter. Be sure to enclose addressed stamped envelope when writing to Mr. Graffam.

Q. How do I finish the edge of wallpaper around a plastered arch? The paper goes only to the edge and not on the inside face of the arch.

A. Bring the paper right down over the edge without trimming. Let dry for a half hour or so and then run the seam roller along the edge to be sure that the paper is adhering well. When the paper is thoroughly dry the overlapping part can be cut off easily with a razor blade.

Q. I am planning on digging a four-foot basement under my summer home. Can you advise how to do this without raising the house?

A. It is fairly common to restore farm buildings and give them new foundations and basements. The accompanying picture gives a good idea of how to go about doing this. 1—Remove some sections of the present foundation so that heavy timbers can be placed under the supporting walls of the house. Extend them far enough beyond the house so that they will not interfere with the new foundation when it is put in. Support these timbers on jack posts that have bases which will adequately carry the load.

2—Dig out from under the house for the footing and walls. 3—Establish corners for footing and foundation walls by dropping plumb bob from plates at corners of building. For small buildings a footing 16" wide by 8" thick usually is sufficient. Note: the footing should be below frost level.

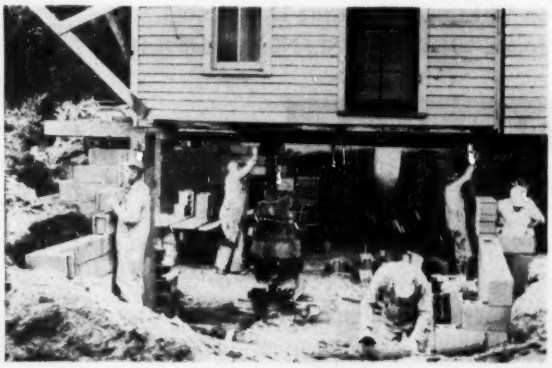
4—Mix concrete footing, using 1 part Portland cement, 2¾ part sand and 4 parts gravel or crushed stone up to 1½" in size. Not more than 5½ gal. of water should be used per sack of cement with average damp sand.

5—After cement hardens lay up the concrete masonry walls. For your house 8" walls should suffice. For the mortar mix use 1 volume of masonry cement and between 2 and 3 volumes of damp, loose mortar sand; or 1 volume of Portland cement and 1¼ volumes of hydrated lime or lime putty and between 4 and 6 volumes of damp loose mortar sand. Insert window frames as you build the wall and brace them into position. You must provide for ventilation if you want a dry basement. 6—If you do not plan on a cement floor, I suggest you fill in the floor with several inches of crushed stone. If the soil is not well drained you should provide drainage tile around the footing and drain away from the house.

Q. I have just purchased an old building which must be nearly sixty years old. It has no basement and the joists lay just above ground level. We are getting a disagreeable, musty odor which originates from under the floor. Can you suggest a way of eliminating this nuisance?

A. I believe this odor is caused by lack of ventilation. A basementless house should have openings at least eight inches square for every ten lineal feet and the floor joists should be at least 2'6" from the ground. My suggestion is that you break out two openings in opposite sides of the foundation, covering both openings with hardware cloth to keep out small animals. In one opening install a ventilating fan that will force this musty air out of this space. The fan could be removed later if conditions improve.

Q. My particular difficulty pertains to the appearance of moisture on the two outside walls of a bedroom. Mildew is beginning to discolor the walls. To the best of my knowledge the walls are constructed in conventional F.H.A. manner using horizontal lap siding, sheathing, and interior gypsum wallboard; no wall insulation and no vapor barrier. Could you give me any help with this problem?



A. I believe your trouble is caused by the warm, moist air in the room hitting the inside surface of the outside walls. The remedy would be to raise the temperature of these surfaces. Remove the wallboard and attach 2" blanket type insulation between the studs. This insulation should be protected by a vapor barrier. Seal the joints where the insulation meets the wall with moisture-proof tape at least 2" wide.

Another way to correct this trouble would be to nail wood lattice strips to wall every 16" on center. Attach ½" thick rigid insulation boards to the strips, size the surface and paint with lead and oil paint. This paint resists the passage of moisture better than a cold water paint.

Q. There are three fireplaces in our home which were built about fifty years ago. They are lined with firebrick on the sides and a large slab of the same material lined the back. The sides and back were plastered over and presented a smooth, unbroken finished surface with no joints showing. This surface has since worn or been burnt away, exposing firebricks with mortar between joints crumbling away. I would like to restore these fireplaces to their original condition. A friend of mine says he used cement, lime and fireclay but he has forgotten the proportions of each ingredient. Could you give me any information regarding this mixture?

A. I referred your problem to Structural Clay Products Institute. They have recommended Type A-1 mortar with 5% to 10% ground fireclay in place of lime. This is a high grade strength mortar suitable for general use and recommended specifically for reinforced brick masonry. See table.

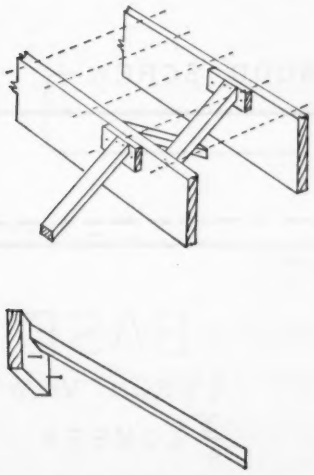
MORTAR PROPORTIONS BY VOLUME (1)

Mortar Type	Portland Cement cu. ft.	Masonry Cement (2) (ASTM C91–) cu. ft.	Hydrated Lime or Lime Putty cu. ft.	Aggregate measured in damp, loose condition cu. ft.
A-1	1 1	none 1—Type II	not more than ¼ none	Not less than 2¼ and not more than 3 times the sum of the volumes of cement and lime used.
A-2	1 ½	none 1—Type II	not more than ½ none	
B	1 none	none 1—Type II	not more than 1 none	
C	1 none	none 1—Type II	not more than 2 none	

(1) For the purposes of these specifications, the weight of one cubic foot of the respective materials used shall be considered to be as follows:

Portland Cement ..... 94 lbs.
Masonry Cement ..... weight printed on bag
Hydrated Lime ..... 40 lbs.
Lime Putty (Quick Lime) ..... 80 lbs.
Sand, damp and loose ..... 80 lbs. of dry sand

(2) Masonry cements not recommended in mortars for use in reinforced brick masonry.

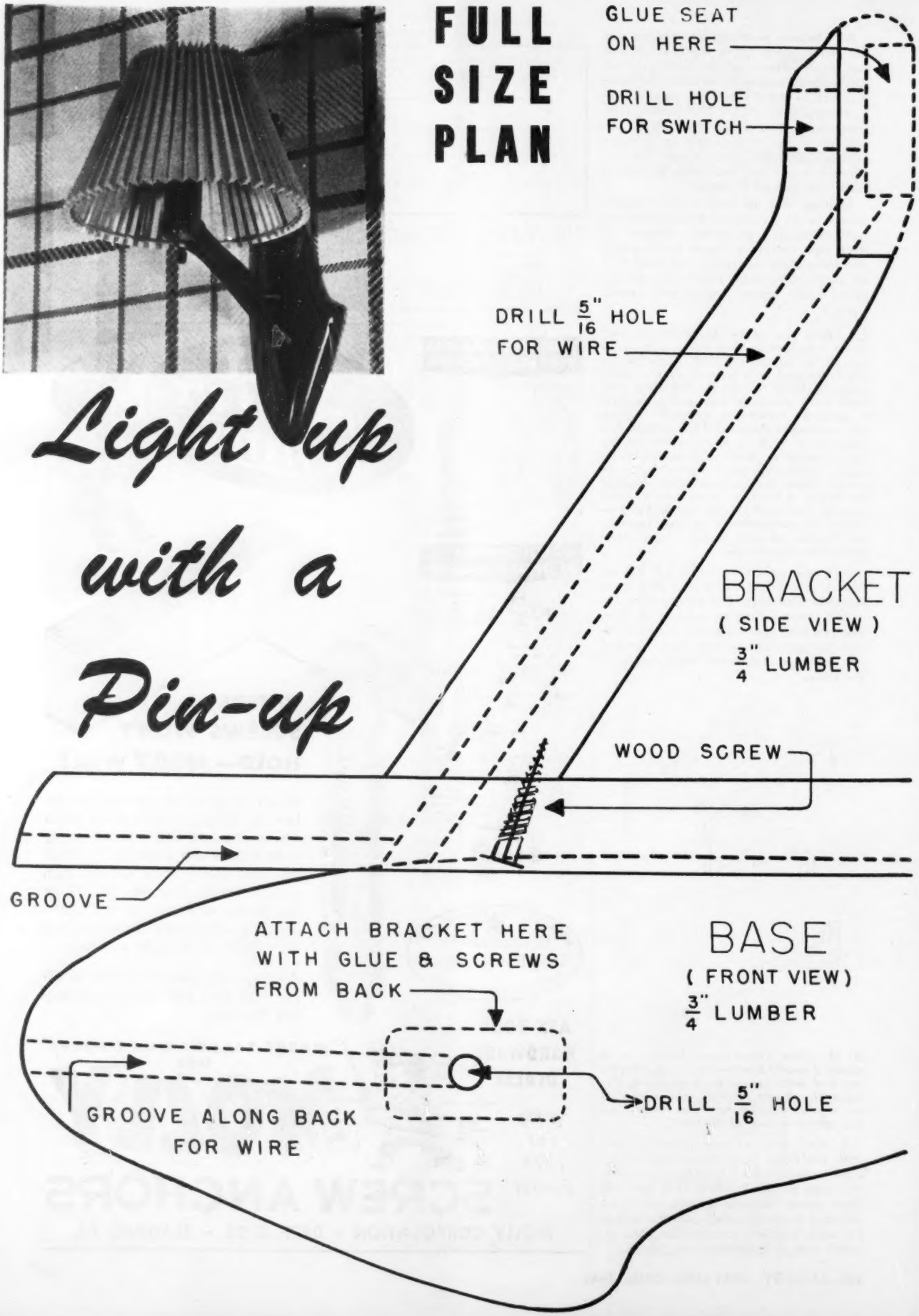


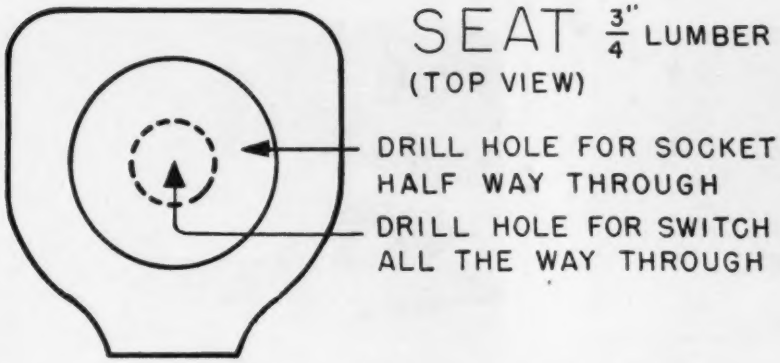
Q. My floor frames are bridged with plank. I would like to remove this bridging and use regular cross-bridging. Because the floors already are in place I am unable to nail to cross strips. Can you advise a way to do this?

A. One way to add cross-bridging after sub floors have been laid is to nail a short piece of 1 x 2 to bridging member as shown in sketch. You then can nail these pieces in place as you would for ordinary bridging. Do not nail the bottom ends until you are sure the joists are drawn into alignment.

FULL SIZE PLAN

Light up with a Pin-up





By ROBERT D. WRAY

GOT any dark corners or out-of-the-way places in your house that need brightening up? Several small pin-up lamps like these will solve these lighting problems attractively and inexpensively. And all it will cost you is a little more than a buck per lamp for wire, fixtures, and shade—plus an evening or so of fun in your workshop.

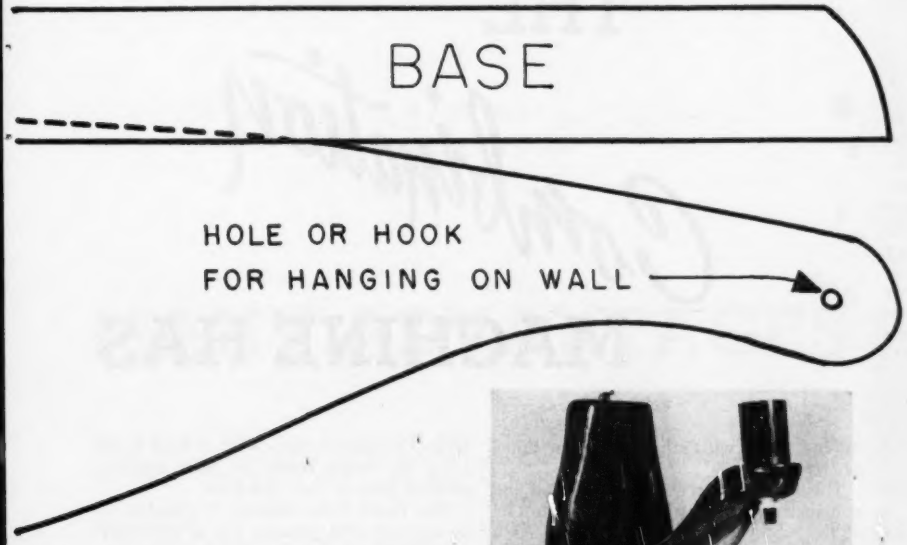
Each lamp consists of three pieces: base, bracket, and a seat for the bulb socket—all made from ¾" stock or thicker. You probably have all the material you need right in your scrap pile. Here's a chance to make good use of those odds and ends of knotty pine or figured hardwood that you didn't have the heart to throw away.

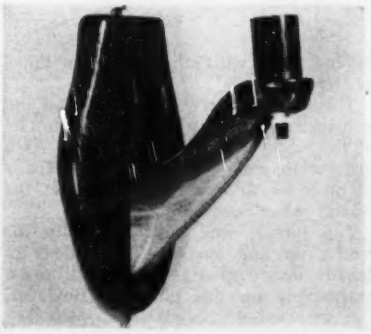
First, cut the base and bracket to shape. If there is a bad spot in the piece you've chosen, just cut around it. For in these days of free-form design, the shape is up to you.

Next, make the seat for the socket. Bore the hole for the socket before cutting the piece to shape, to avoid splitting. Use an expansion bit set for the diameter of your socket and bore until you can just feel the tip of the bit coming through the other side, or until there is about ¼" of wood remaining. Change to a smaller bit large enough for the switch to fit through, and bore the rest of the way through the seat piece. Then bore a hole this same size through the end of the bracket, so that when the seat is glued in place the two holes will coincide. Now you can scroll-saw the seat piece to shape.

Glue and clamp the seat in place on the bracket, and glue and screw the bracket to the base. Carefully bore a 5/16" hole for the wire from the back of the base lengthwise through the bracket and ending inside the large hole in the seat. If your bracket has a curve in it, you may have to bore from each end and let the two holes meet at a slight angle in the middle of the bracket. Now cut a small groove for the wire in the back of the base from the hole to the bottom edge. This will allow the base to hang flush against the wall.

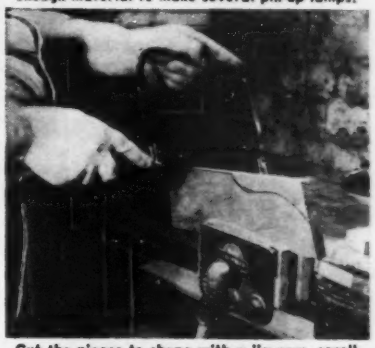
Rasp all the edges round, sand, and finish. When the finish is dry, slip the wire through the hole, connect it to the socket, and fasten the socket in place with the nut provided. A bulb and a shade that clamps to the bulb complete the job. Now you've got a handy lamp to "Brighten the corner where you are."





All it needs now are the shade and bulb.

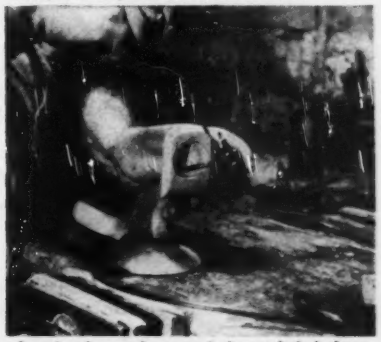
Your scrap lumber pile probably will yield enough material to make several pin-up lamps.



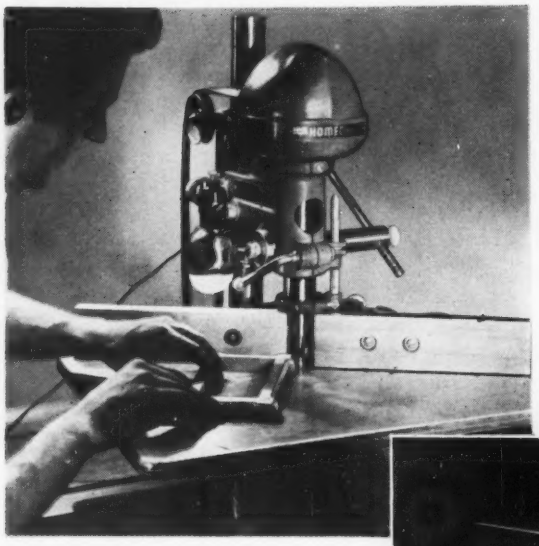
Cut the pieces to shape with a jig saw, scroll saw, or coping saw.

Glue the seat to the bracket and then glue and screw the bracket to the base.

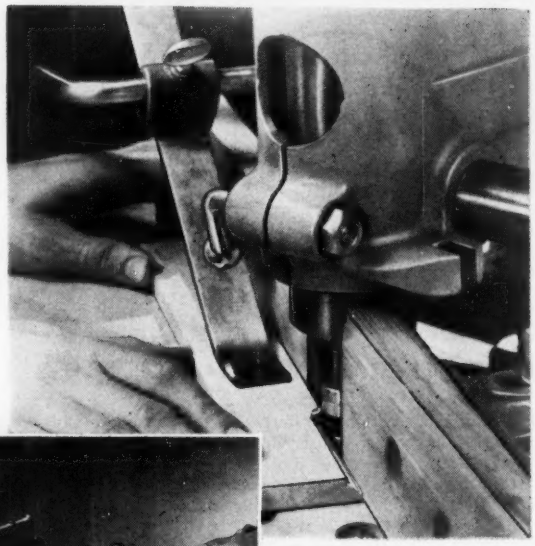
Bore a 5/16" hole completely through the seat, bracket, and base for the wire.



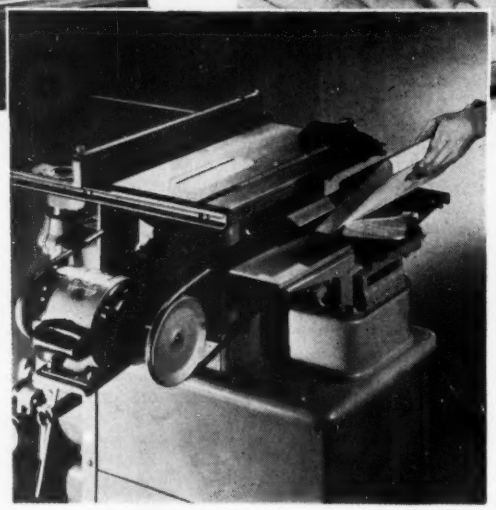
Insert wire and connect to socket before fastening socket in place.



Fitted with the shaper attachment, a great variety of shaping jobs may be done on the drill press.



Another job easy to accomplish on the drill press fitted for shaping.



Bevel angle planing and jointing for perfect angle joints is accomplished by using the tilting fence.

THE *Combination* MACHINE HAS

SINCE the publication of our series on "How To Set Up A Home Workshop" we have had many requests for information regarding the new combination—individual unit—home workshop woodworking machine. We feel we should let our readers know what we think of this equipment which requires so little space and which does so much.

This machine is a combination of four individual units, all built around an 8" tilting arbor saw. The complete combination may be purchased at one time or, if desired, the saw may be purchased separately—and the other units added as one's budget permits. With a few inexpensive accessories the four-unit machine will handle almost any job around the average home or in the home workshop. All four of the machines are operated by a single ¾ hp motor.

The saw, the initial unit, is of the modern tilt arbor type, fitted with an 8" blade that will cut through a 2¼" board. It will handle about anything the home craftsman will want to do in the average small shop. It is mounted on a sturdy steel bench which requires an area of about three feet square, making it possible to squeeze the complete set-up into almost any corner.

Our advice to the beginner would be to add the drill press as his second unit. This machine, operating from the same motor, is attached to the saw table, and is driven by a belt riding over a pulley fitted to the saw arbor.

The press is bolted to the saw table in a manner which makes it possible to swing it down out of the way when the saw is being used. Upright, it can be used for drilling wood or metal. With a few inexpensive accessories it can be used for shaping, routing, spindle and drum sanding, mortising and tenoning, buffing, along with numerous other time-saving tasks.

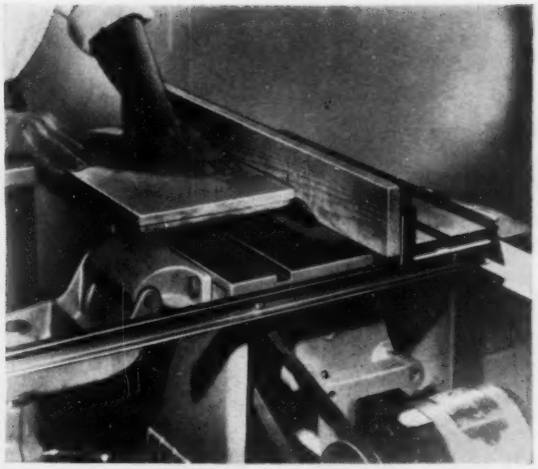
The 4" jointer attaches to the stand and is driven by a pulley on the opposite end of the motor that drives the saw. As a precaution, make sure the cutter guard is in place at all times, or disconnect the jointer when operating the saw.

The jointer was built originally for truing up and surfacing the edges of boards before gluing, and is still used extensively for this purpose. However, today's craftsmen save a lot of hard hand labor by doing many of their smaller planing jobs on this machine.

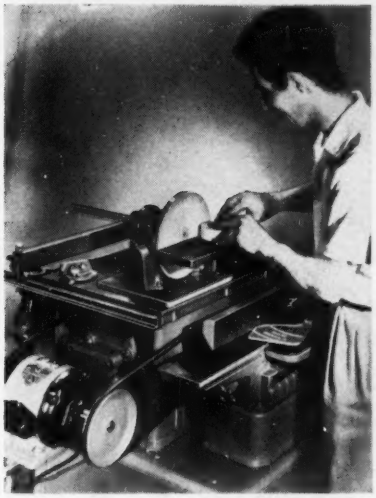
The fence tilts, making it possible to do beveled edge planing just as smoothly as straight edge work. By removing the guard and adjusting the rear table, rabbeting also may be done speedily and with excellent results.

The disc sander is made to sit on top of the saw table and to lock in the slot, from which the saw slot plate first must

The jointer is a fast means of cutting good rabbets.

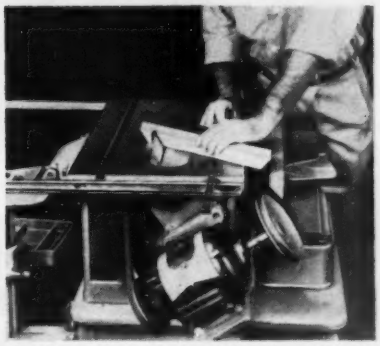


With the molding cutter attachment fitted in the saw, all sorts of molding cuts may be made.

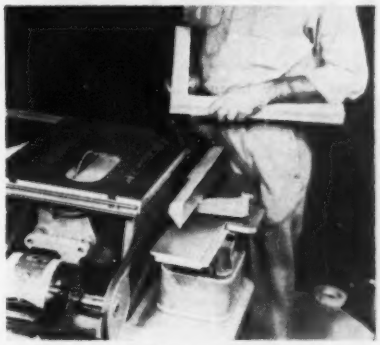


The disc sander locks automatically to the saw table.

With the table extension in place the saw will cut to the center of a 48" panel.



The tilt arbor saw, in combination with the graduated miter gauge, permits making two-way angle cuts in one operation.



Cutting accurate miters is a simple operation when the miter gauge is used.

By DICK HUTCHINSON

Associate editor

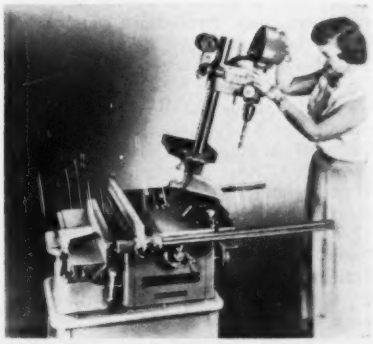
MANY ADVANTAGES

be removed. This also is operated by the one motor that drives all four units. The sander table tilts so that almost any angle of the smaller jobs may be handled successfully.

The arbor extends through the head of the sander, making it possible to do grinding and buffing, or a chuck may be fitted on the arbor for horizontal drilling.

Each of these four machines is individual and can be combined to save space for the man who has only a limited area in which to work—also to eliminate the expense of several motors. However, if at any future time the owner wishes to expand his shop, the machine may be dismantled and each machine set up individually to operate on separate motors.

The machine is easy to set up, easy to operate, and just as easy to change over from one unit to another without heavy lifting. A few hours of experimenting will enable any beginner to turn out professional looking work.



When not in use the drill press swings down easily and out of the way.

Table set and ready for use.

EARLY AMERICAN ROUND TABLE *With* LAZY SUSAN

By FRANK E. HILL, JR.

Our family bought an older type Colonial home that was built about 80 years ago. When we began to furnish it we found that Early American pine reproductions, while suitable, were quite expensive. After deciding what kind of dining room furniture we would use, and seeing lovely settings in pine, we chose the round table.

I set to work in my basement workshop to construct the table. I drew up my own plans and, when I finished the table, felt that others might appreciate the plans to build a similar project for their own home.

This table is made of knotty pine and is the type our forefathers constructed during the early years of our Republic. Its proper nomenclature is "Early American Round Table With Lazy Susan." Beautiful and useful, it will thrill any woman who appreciates the warmth and charm of knotty pine in dining room furnishings. Any handyman can make this table and save over a hundred dollars. The materials cost me around $30.

Procedure: Rip planks to 7" width. Finish all surfaces on planer. Cut and arrange planks so you can scribe a circle 62" in diameter. Rough edges with sandpaper to hold glue.

Clamp even; clamp ends to insure evenness (wipe glue off end-clamped boards so that when you take them off they will not pull wood from table top). Allow to dry 24 hours. Belt sand top and bottom to remove glue and rough spots. Scribe circle-brace bottom with two cross pieces to prevent snapping planks when you lift table top into various positions (same with Lazy Susan).

Place blanket on floor to cushion top after cutting with band saw on circle scribed. Divide table into four equal parts.

Make sure legs support glued planks that are smaller. Measure in 3½" on each of lines that divide circular top. This mark is where outside point of 2½" x 2½" legs go. Place legs on point 3½" in on the dividing line and mark around leg top to get position. Do this on all 4 positions.

LEG POSITIONS

3- IN FROM EDGE

Cut aprons, 4" wide, to fit between leg outlines. Attach 1½" strip to apron to reenforce both sides top and bottom. Do not glue apron to top of table; allow for expansion and contraction. You may wish to reinforce the apron with 2" corner braces

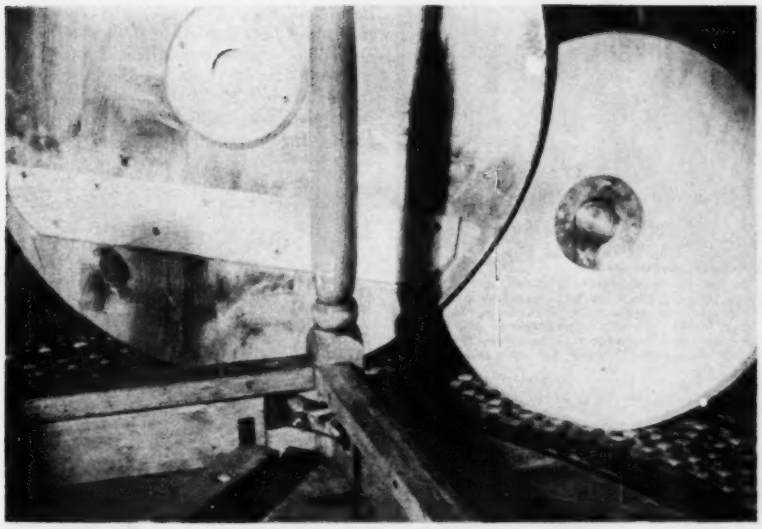
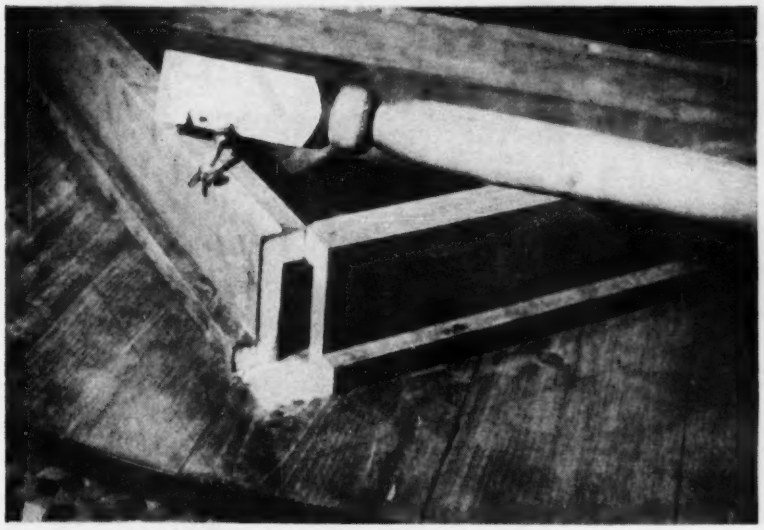
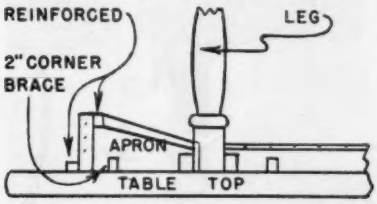


Table corner showing leg, Lazy Susan.



Leg dismantled, showing corner block, bolt, washer, butterfly nut.

as shown in the upper photograph.



Cut legs to 29" and turn on lathe, leaving 4½" unturned to fit apron corner. Sand while turning on lathe. Measure down 2" from top of leg and drill holes 1½" deep to screw handrail lags. Place corner blocks in place and screw in; attach legs with washer and wing nut.

Finishing: Sand smooth by hand. Raise grain by applying 1 quart water with 1 teaspoon of glue to hold wood fibers in place to resand. Final sanding with garnet paper.

Fill pint mayonnaise jar with paint thinner; mix in turkey burnt umber and red sienna to desired stain. After staining, sand lightly with garnet paper. Four coats of finish mentioned in list of materials. Sand lightly between coats; allow each to dry 24 hours.

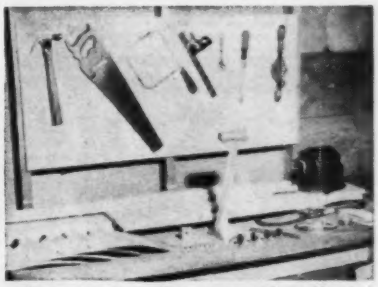
Allow last coat to dry one week, then rub down with linseed oil rag dipped frequently in rotten stone. This finish will withstand heat and all kinds of abuse. Do Lazy Susan the same way. Attach roller bearing ring to Lazy Susan; to this attach plywod circular board about 28" in diameter, and felt base to protect table top from scratches.

BILL OF MATERIALS

2	14' (1½x14") kiln dried boards
1	7' (1½x14") kiln dried board
2	14' (6" x 1") pine boards for aprons
4	2½ x 2½ x 30" long, for legs
72	1" screws
72	1½" screws
1	pint of phenol resin glue (waterproof)
4	steel corner blocks
1	quart finish (tung base and dryer)
4	handrail lag screws (4" long) with washers and wing nuts
1	(2 x 3) hardwood brace for bottom of table
	Sandpaper

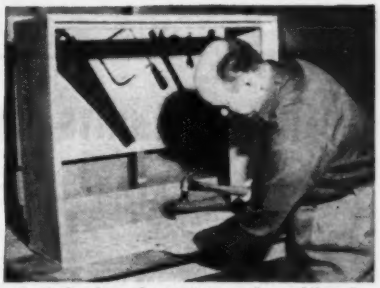
You can do it!

MAKE THIS 24-INCH WINDOW EXHAUST FAN IN TWO EVENINGS

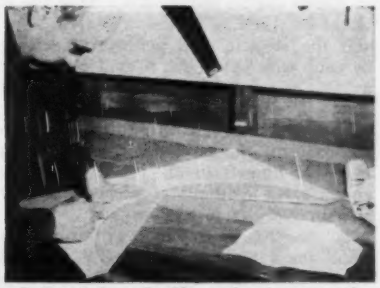


Kits appear to be the rage nowadays. Here's a fan kit that comes complete with 24" steel fan blade, cast aluminum pedestal, and V-belt drive. Get the wood material from your local lumber yard. The ¼ h.p. motor may be purchased new, or you even can use a motor salvaged from an old washing machine—or some similar appliance.

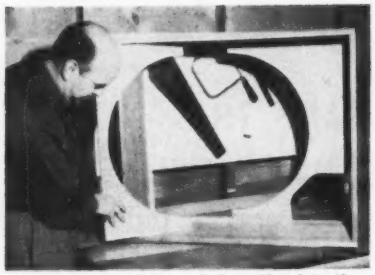
1: A four-sided box of 1 x 12 fir, pine or redwood is assembled with wood screws. The screws and bolts come with the kit.



2: A border of quarter-round moulding is nailed to the inside of the box. Molding positions the orifice for maximum efficiency.



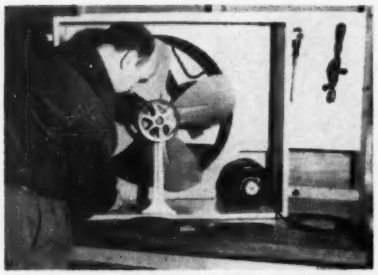
3: Two halves of orifice and motor compartment cover are traced on ¾" exterior grade plywood from full size patterns, cut out with a coping saw, and drilled with a hand drill.



4: Fit the two halves of the orifice into the frame and attach to quarter-round moulding with wood screws.

5: Attach the motor compartment cover to the frame and then cut out and install the spacer blocks. This takes a bit of fitting to be neat and tight. That's all for one night, except the sanding and one good coat of outside paint to match the wood trim on your house.

6: Assemble the V-drive pulleys on the shaft and insert the shaft through the two bearings in the aluminum pedestal. Place the fan on the other end of the shaft and tighten the set screws.



7: Set the pedestal in position so that the fan blade is centered in the orifice. Drill 1/4" holes to match the base of the pedestal, and bolt down. Motor is positioned, using the V-belt, and installed in the same manner. Fan now is ready for operation.

Finally: Recommended mounting is on outside of house on upper half of window. Rubber cushioned mounting brackets attach to window frame with four screws. Upside down mounting as shown protects motor from weather. Plug in the motor and enjoy that cool night air *inside* the house.

**All photos courtesy of Gilliom Power Tools, Mfr. Gil-Bilt parts and kits.*

HELPFUL HINTS FOR DRILL OPERATIONS

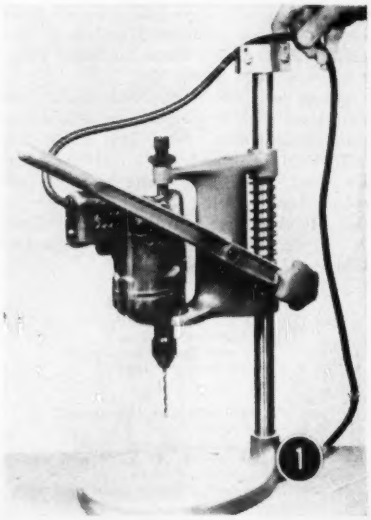
By H. LEEPER

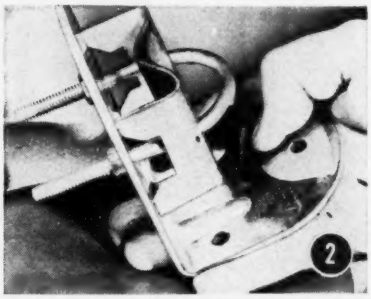
PORTABLE quarter-inch drills may be used with added convenience in the shop, in drill stands of the type shown in Photo 1. While this particular stand is sold by Black and Decker, various makes of stands are on the market. This one is about 20" high.

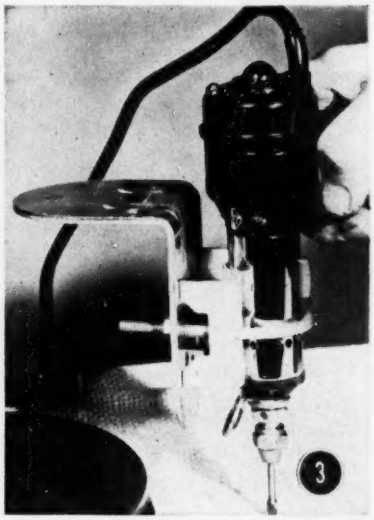
If the electric cord persists in getting in your way with such a drill stand, use a 2½" TV mast clamp as shown also in Photo 1—at the top of the stand post, with part of the clamp extending above the extreme top section. The cord then may be slipped in the opening of the clamp sides—without pressure—and will remain away from the operator.

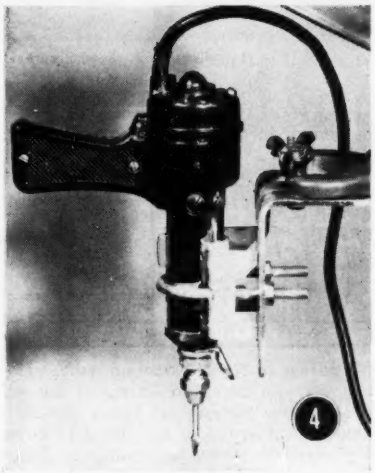
To use this and similar stands with a small hand tool, arrange a TV antenna mounting base of the type seen in Photo 2.

Such a mounting base, which is around 4" in height and 3" wide, with clamping arrangement, is attached easily to the hand tool as in Photo 3. This assembly then may be attached to drill stands designed for the larger drills, by bolts and wingnuts, as in Photo 4. Photo 5 shows the hand drill ready for use as a bench drill, a set-up which will prove time saving for many light jobs. The wing-



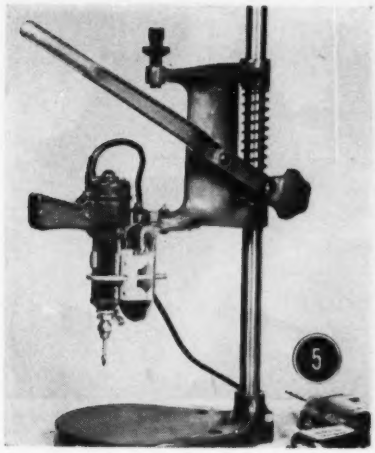


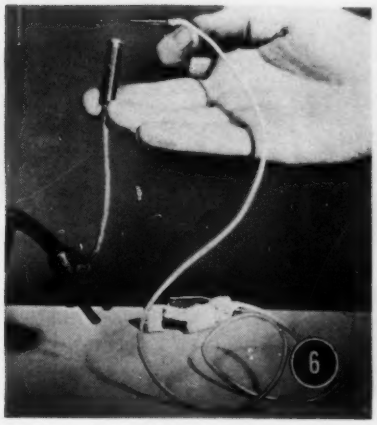


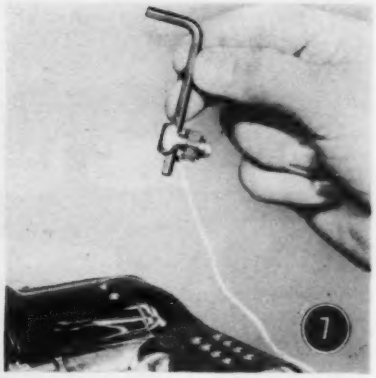


nuts permit the hand tool to be attached or removed quickly.

A convenient method of grounding the frame of the quarter-inch drill is to attach an insulated radio jack to the grounding wire furnished with the drill and which extends from the line plug.





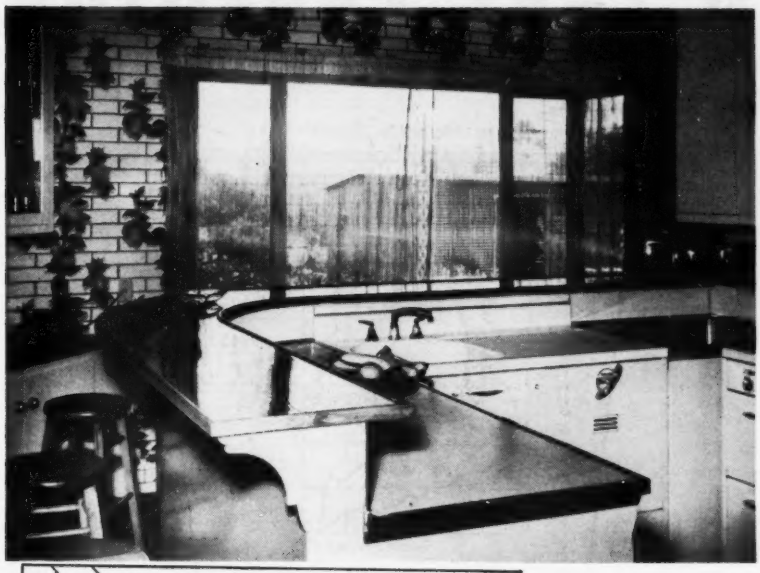


A flexible grounding wire with metal phone tip fitting the jack on the one end and a spring clip on the other end makes it easy to ground to nearby grounded equipment. Photo 6.

To keep the drill chuck key handy use a light insulated flexible wire or a cord loosely twisted around the electric cord of the drill. At the other end of the wire or cord, clamp the key with a solderless connector as used for No. 8 wire, as in Photo 7.

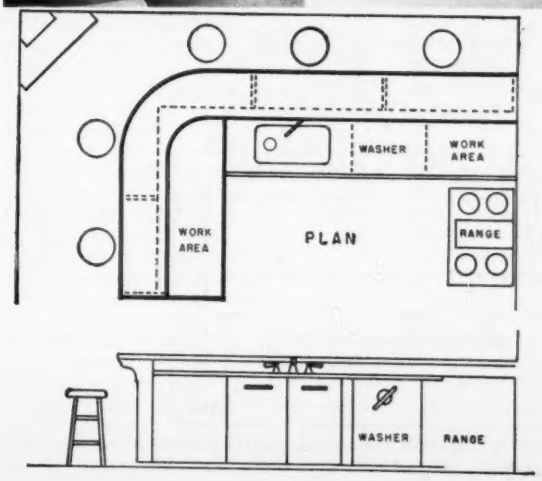
KITCHEN BOUNDED BY SNACK COUNTER

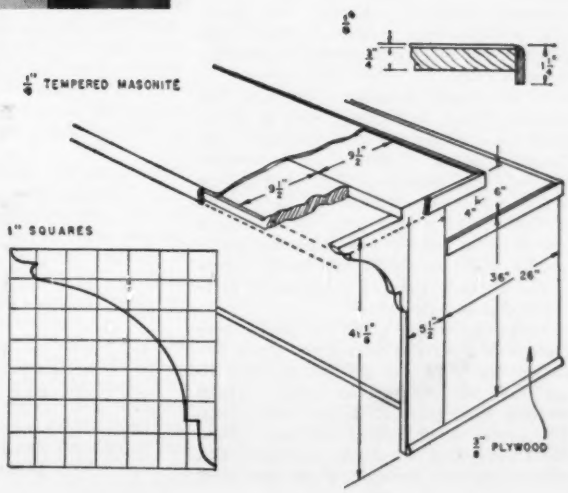
by HI SIBLEY



AN excellent space-saver is this arrangement for serving meals right hot off the range, handy for the chef, and plenty of elbow room for as many as eight customers in this case.

Construction is simple: the counter is mounted on a "fence" around the work area and kitchen equipment, and is covered with a material easy to keep clean. Stainless steel molding may be used in place of the wooden one shown in the photograph.





Materials needed for decorative flocking: flocking in assorted colors, varnish, oil paints, brushes, print roller, sifting screen.

Sifting the flocking through home-made screen.

THERE'S FUN AND PROFIT IN FELT FLOCKING

By DICK HUTCHINSON
Associate editor

THE USE of felt flocking in the manufacture of a wide variety of novelties is making this a popular material with craftsmen and hobbyists. Automobile manufacturers are using it even, for decorating instrument panels; while radio and television companies are finishing some of their finer instruments with it.

Felt flocking has almost endless possibilities for the hobbyist. It is easy to apply, comes in great variety of colors from which almost any other color or combination of colors may be mixed.

We have been experimenting with felt flocking for some time now, with remarkably good results. It would be difficult for the novice to paint a picture without expensive training, whereas with flocking anyone—even without talent—can effect some mighty attractive reproductions in color.

We've done a number of subjects like animals, birds, butterflies, etc., in all of their true colors, by the application of flocking. However, this article is beamed toward the beginner and emphasizes articles that are known to be salable novelties. So, if you want to develop a hobby from which you may realize a profit—or if you want a new hobby merely for the enjoyment of it—consider seriously this felt flocking.

From experience gained in the manufacture of novelties during the years between World War I and World War II, we have selected certain pieces which seemed most popular, to tell you about. The pieces we manufactured were plain, hand decorated, or copper trimmed, and always were in demand. I am sure they

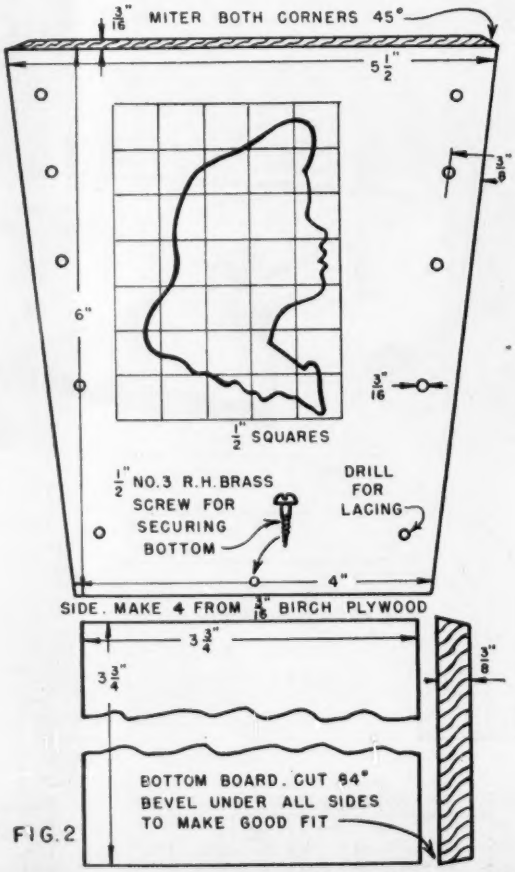


FIG. 2

DETAILS OF PARTS FOR DRESSING TABLE CLEANING TISSUE BASKET. LACE TOGETHER WITH LEATHER.

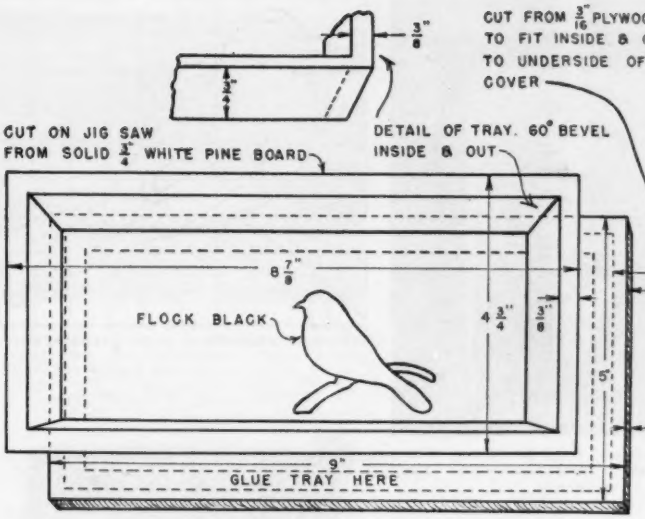


FIG. 4

DETAIL OF PARTS FOR PIN TRAY TRAY FROM 3/4" PINE.

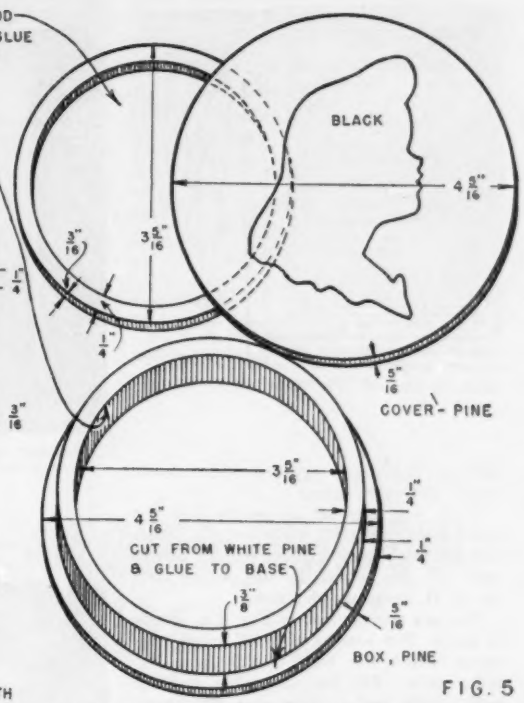


FIG. 5

DETAIL OF POWDER BOX FOR FLOCKING

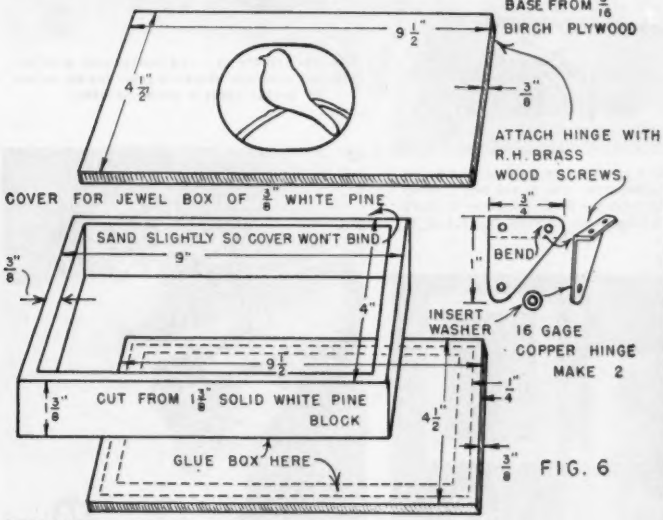
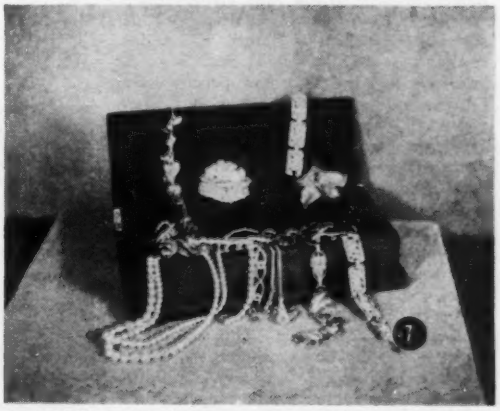


FIG. 6

DETAIL OF PARTS FOR JEWEL BOX



Black flocking on the inside as well as outside adds a richness in keeping with the nature of the jewel box's contents.

would be now if they still were available.

The materials and equipment you will need for getting started in this business/hobby are:

A jig saw. A small bench saw will help with much of the work. A small drill press—or a good hand drill will do to start. A quantity of white (sugar) pine scraps. Some 3/16" to 3/8" scraps of birch plywood. All of the lumber required can be picked up for a few cents at any local cabinet shop.

The flocking you will need to start will be 1/4 pound each of black, white, bright red, canary yellow, grass green, and navy blue. Almost any other color can be made by blending together two or more of these. Several artist's brushes, ranging from a No. 1 sable hair brush up to 1/4", will be required for applying the enamel.

Then you will need some sort of a small screen sifter. A kitchen sifter will do. We happened to make the 5" diameter sifter shown in Fig. 1 by sawing out the frame and then tacking a piece of window screen to the back. It works fine.

The sifter is used for sifting the flocking onto the enameled surface, and for mixing colors. The print roller is used for rolling the flocking when a heavy coat is desired.

Your dealer will try to sell you cans of different color enamels for applying the flocking. They are perfectly good, but so often such a little of one color is needed that these quantities will be wasted. In our case, we keep a small can of spar varnish, and a tube of artist's oil paint in each of the colors we will use.

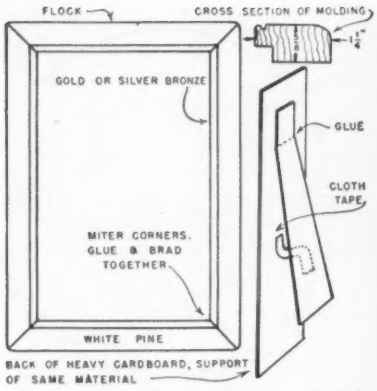
To prepare the enamel we put a little of the varnish in a small can cover, and into this squeeze enough of the particular color oil paint we need. The enamel should be the same color as the flocking, otherwise if it should soak through it will discolor the flocking.

Several pieces are illustrated with drawings, as well as with photographs. The drawings show clearly enough how the pieces are made.

Fig. 2 shows details of the parts for making the dressing table cleaning tissue waste basket. This is all of birch plywood, cut out and drilled as shown. Sand all edges smooth, then give exposed surfaces one coat of white shellac and let dry. This is to prevent the wood from absorbing the enamel, which otherwise would produce an uneven coating of flocking.

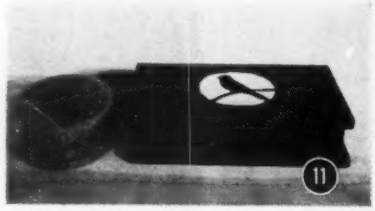
Sketch the outline for the silhouette on each of the four sides (any silhouette may be used), mix the black enamel, and brush on an even coat to cover within the silhouette outline. Then sift on about 1/8" of black flocking and set aside to dry.

When dry, dust off the surplus flocking. Next mix bright red enamel and go over each piece one at a time with the enamel. Then sift on the red flocking; be sure that

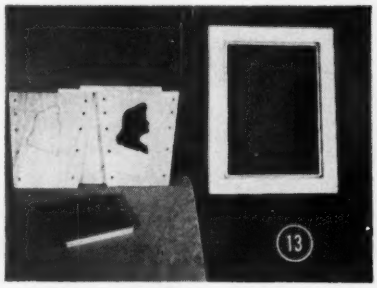


DETAIL OF STAND PICTURE FRAME FIG. 8

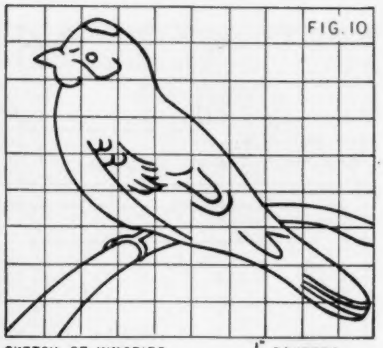
"I've been framed!" cried the author's wife. Frame is flocked in black; beading flocked in gold-bronze.



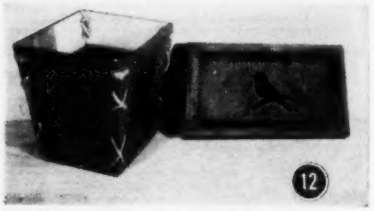
The completed powder box done in flesh color with black silhouette. The jewel box is done in bright red, with the bird silhouette in black on a gold background. Inside is flocked in black.



Assembled picture frame; parts for the waste cleaning tissue basket.



SKETCH OF KINGBIRD $\frac{1}{2}$" SQUARES



Black silhouette on a red background provides striking contrast. Green leather lacing on the basket lends a dramatic note.

Using the jig saw for making the inside cutout in the block for the jewel box.

Powder box and jewel box partly assembled. Black silhouettes flocked on covers of both boxes.

the top edge also is covered. Fig. 3 shows model sifting flocking.

When dry, dust off as before; lace the four sides together tight with leather thongs. We used green, which blends well. Set the bottom in and secure with the R. H. brass wood screws.

The pin tray shown in Fig. 4 is simple to make. The base is of 3/16" birch plywood, while the tray is cut from ¾" white pine. Tilt the saw table and cut both inside and outside at a 60° bevel. Sand, and glue to the base; clamp to dry.

Coat with white shellac, then flock the silhouette in black as before. When dry, flock all over with bright red. Some of you may feel this is a slow process—and for the individual piece it is. But when you make the pieces in quantities the application of one color of the flocking can be made on great numbers at one time, resulting in but little delay between the different colors.

Fig. 5 details the powder box. The top and bottom are of 5/16" white pine. The ring body of the box is sawed from 1⅜" white pine and is glued to the bottom. The plywood ring is cut and glued to the underside of the cover. This should fit down inside the box to center the cover. Shellac, then apply the black silhouette. This piece is flocked in flesh color (obtained by mixing red and white flocking).

In Fig. 6 the body of the jewel box is cut from 1⅜" white pine. Top and bottom are from ⅜" pine. The body is glued to the base, and the top of the box at the back is sanded down slightly, rounding so that the cover will not bind when being opened. The box is given a coat of shellac, then the silhouette is applied. When dry, dust off and mix canary yellow and white flocking until a soft golden yellow is obtained. Flock the oval background with this, then flock the box bright red. To complete it flock the side with black.

The hinges are cut from 18-gauge copper, formed and drilled. They are fastened to the cover with ⅜" No. 2 R.H. brass wood screws. Set the cover on and place a small brass washer under the hinge to form a pivot; secure the hinges with the brass wood screws. This box can be made in any size, even large enough for a glove or handkerchief box. The completed box is illustrated in Fig. 7.

The stand picture frame shown in drawing Fig. 8 and in photo Fig. 9 is an attractive piece that can be made easily in any assortment of sizes. The moulding, a cross-section of which is shown in the drawing, was made on the bench saw and sanded by hand. A quantity of moulding can be run out on the saw in a short time. It is of white pine and works easily.

To make the frames, miter the corners and glue and brad together. Round the corners slightly. Shellac, then apply the black flocking. When dry, dust off. Apply two coats of either gold or silver bronze to the bead. When this is dry, rub over gently with a piece of polished steel. This will produce a polished gold effect.

The back and the standard are cut from heavy hard cardboard. It should fit over the picture in the back. Glue the standard on, adjust, and attach a strip of cloth tape, as shown.

We are illustrating the various pieces in different stages of completion for the benefit of our readers. There is any number of silhouette subjects which may be used in decorating pieces of this type.

If interested in converting one's spare time into profit these pieces, as well as many others of original design, may be sold or consigned to art and department stores. I tell you, they will sell.

Check size of wood sash before installing unit. Opening should be ¼" larger on all sides than the double-glazed unit. Also, check the window opening against the size of window unit. Unless specifically indicated on glass there is no top or bottom.

Remove exterior glazing stop from factory sash before installing double-glazing. Setting blocks on sill are placed one quarter of opening width from each end. Also, check the opening sash for evenness and uniformity before installing glazed unit.

Next in importance to a good glazing job is a good glazing compound that has been adequately worked. An elastic glazing compound which retains its resilience permanently is recommended.

Now's A Good Time To Plan For Winter:

EASY-TO-INSTALL DOUBLE-GLAZED WINDOW SAVES ON FUEL BILLS

Pittsburgh Plate Glass Company photos

Wood setting blocks ¼" thick, 1" wide and about 3" long are placed in the position indicated by pencil mark on face on inside stop. A 36" sash width is used in this installation, thus the setting blocks are 9" from the ends.

Double-glazed unit is put into place on the setting blocks and gently pushed into position against compound covered stops. Glazing stops should be applied carefully. Be especially particular to keep the screws headed vertically and to leave the screw head so the slot is vertical.

Adhesion of the glazing compound helps to hold double-glazing unit in place. However, as a precaution, temporary stops should be placed on top and sides. Next step in glazing is to fill in the voids between the steel frame and the wood opening which is the ¼" clearance allowed for setting. With the exterior glazing strips in place the next step is to force the compound and eliminate all the voids. At the bottom of sash it is always good judgment to let the compound slant from the glass to the bevelled stop. Be sure that all metal edges are completely covered with compound as this improves the weatherability of glazed unit.

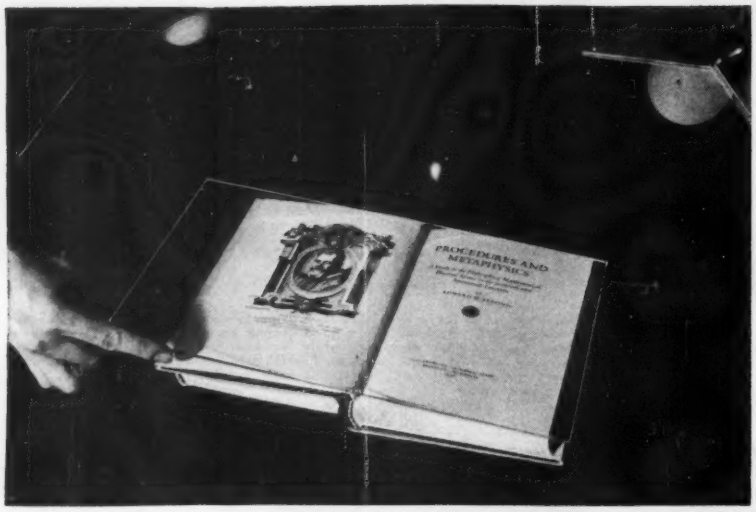
Starting along the side jamb of wood frame, apply a sufficient amount of glazing compound to the perimeter of the back or permanent glazing stop. It also is important to surround the setting blocks with compound but to keep block top clean. Compound is applied to exterior glazing stops. Allow at least ⅛" of glazing compound between the steel channel frame and stop. An important factor to consider is that glazing compound and stop should extend beyond edge of steel frame. This increases insulating qualities of the unit.

Home owners and builders no longer are faced with the problem of insulation that their predecessors were two decades or so ago. Advances in window design and the development of efficient winter heating and summer air conditioning systems have added to year-round health and comfort.

Integral double-glazed insulating units reduce the tendency for condensation to form on the room-side glass surface, minimize cold down-drafts and save on heating and air conditioning bills, because their insulating efficiency is twice that of the ordinary single-glazed window. These units consist of two panes of glass held in a stainless steel frame and separated by a ½" hermetically-sealed air space.

The average home owner can install a smaller double-glazed unit as easily as a single pane of glass. These pictures and captions tell how, step-by-step.

Close-up view of the completed glazing job with the exterior glazing stops removed. Note how the glazing compound on the inside plate extends above the stainless steel channel.



Books or wrinkled copy can be held flat with plate glass. Glass should be clean, and lights adjusted to bar reflections.

An opaque cloth wrapped and tied around the lamp-housing will keep stray light away from the film during exposure.

By

MARTIN S. DWORKIN

COPY PLANS WITH YOUR ENLARGER

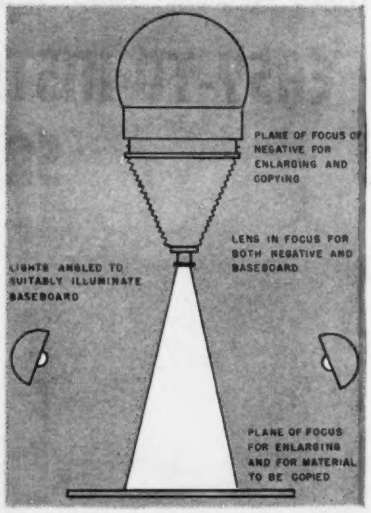
A craftsman who is a photographer also can use his enlarger to copy project plans, blueprints, drawings, designs, and documents of all kinds—to accurate scale. Whether he wants a permanent photographic record, easily filed and preserved, or a simple yet professionally precise method of reducing or magnifying scale measurements, an ordinary enlarger can be used to perform like the copy cameras used by industrial specialists.

Any enlarger may be used for copying, without expensive additions or accessories. If a simple but fundamental photographic principle is grasped, an ordinary enlarger will produce copy work ranging in quality from adequate to excellent—depending upon the skill and equipment of the craftsman.

Many photographers who use their enlargers with proficiency do not realize that their machines are essentially cameras, designed to take an enlarged "picture" of any negative that is put into the holder. Instead of the film of the standard camera, the enlarging camera uses photographic paper held in place in a holder on the baseboard. One can imagine an invisible "bellows" stretching from the lens down to the baseboard, and can visualize the lamp of the enlarger taking the place of sunlight in picturing the scene on the negative.

When an enlarger is focused, so that the negative is projected sharply on the baseboard, two planes have been brought into relative focus one with the other: the negative in the holder below the lamp housing, and the enlarging paper at the baseboard. The lens between then is in such adjustment that material placed in either plane is focused sharply with respect to the other. The rôles of each plane can be interchanged: film can be placed in the negative holder to take pictures of any material placed on the baseboard.

To use an enlarger as a copy camera, first place the material to be copied on the baseboard. Two lights arranged so that they are at angles of 45 degrees to the center of the baseboard should provide even illumination over the surface



An enlarger is two "cameras" with the lens between and an invisible "bellows" stretching down to the baseboard. Roles of each camera can be switched, and the enlarger used to take pictures on film as well as on paper. For copying, lights should be angled at 45° for even illumination of the baseboard.

to be photographed. If the material has prominent folds, or is in book form, care should be taken to hold it flat. A large piece of clear, clean glass can be used—although the lights should be adjusted carefully to eliminate reflections on the glass surface.

To focus the enlarger, place a negative having sharp, recognizable features in the negative carrier. Any of the commercial types of test-focus negatives will do. Then project the negative sharply onto the material to be copied on the baseboard. The enlarger should be raised or lowered, and the lens focused, so that the image of the test negative is large enough to cover the whole area of the material being copied. Once the enlarger is adjusted any material within the area of the image of the negative on the baseboard will be photographed on any piece of film placed in the negative carrier. If the test negative has been blown up to 11" x 14" on the baseboard, for example, the enlarger is ready to copy any plan, document, or other matter within that size.

Most drawings or plans are thin, and the enlarger can be focused on a white

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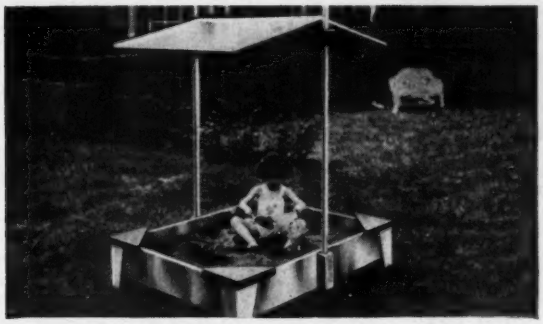

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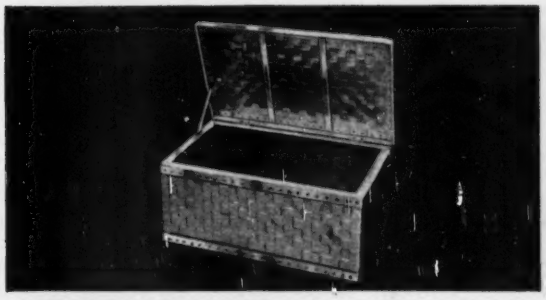

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piece of paper on the baseboard, or on the material itself. If something out of a book is being copied, however, or anything thicker than double-weight enlarging paper, it is wise to focus the image on its surface directly, or on one of the same height. Otherwise the copy will not be sharp.

When size and focus have been determined, the test negative is removed from the carrier, and the darkroom must be prepared for work with unexposed film. Where color correction is not important, slow orthochromatic or color-blind films are recommended for use in the enlarger. These films may be handled under safelights which are relatively bright, and can be loaded into the negative carrier with a minimum of scratches and finger-marks. It is best to master the technique before attempting to use panchromatic film and filters to control stained or colored copy. Since blueprints for example, usually need panchromatic film which must be handled in utter darkness, even if de-sensitized, they should be left for later, after the photographer knows his way in the technique.

Either glass-sandwich or all-metal carriers may be used to hold the film, much as they hold negatives; but each type presents distinct problems. Glass-sandwich carriers are better because they hold the film flatter, but the glasses must be kept meticulously clean. All-metal carriers, or other kinds not using the weight of flat glass to hold the film, should be checked to be sure that the film doesn't bend or buckle. Clips or rubber bands can be used to bind these carriers tightly, to ensure that the film is held flat in the focal plane.

Sheet films are preferable to other types. They are available in many emulsion types designed specifically for copying, and are thick enough to be handled more handily than the easily-curled roll films and film packs. Roll films are not suitable for the process, as the part of the film not being used at any moment must be protected from light. It is easier to work with film that permits concentration on one shot at a time. Owners of enlargers for 35mm film, however, can make a few adaptations of the basic technique to permit them to use microfilms—depending, perhaps, first of all, on the quality of the negative carrier of their machines.

Glass plates may be used in glass-sandwich carriers. Plates are the most rigid but are heavy, bulky, and liable to breakage. For precise copying to exact size, they offer the advantage of not shrinking or stretching. They also are easily loaded into the carrier. If using glass plates, a similar plate should be used for focusing to be sure that it is in the same plane as the unexposed plates used to take the pictures.

Most enlargers are not constructed to keep light from striking the negative-carrier. After loading the film into the carrier the entire lamp housing should be screened with an opaque cloth—such as a dark cloth used as a focusing aid with view cameras. This cloth should be wrapped generously around the whole housing, and bound tightly to keep out all light.

For light that may reflect inside the enlarger from the surfaces of condensers or diffusing glasses, it is advisable to put slips of black paper, such as those packed as interleaves in sheet film boxes, behind each sheet of film when loading the carrier.

Correct exposure is determined as for copying with any camera, compensating for the bellows extension needed in such close work. Exposures may be checked by immediate development. Vibration of the enlarger must be avoided during exposure. For this reason it may be best not to expose by using a lens cap, but by switching the copy lights on and off. If the lens used in enlarging is mounted in a shutter, exposure timing is simplified.

Accurate scale can be maintained at all times by including a measure somewhere in the area of the copy. A small 6" ruler, graduated in 32nds or 64ths, can be laid in any corner of the copy, and used to regulate size. Thus, if a large plan or blueprint has been reduced to 2½" x 3½" in the enlarger it can be enlarged again to its original size, or any other, simply by checking the size of the image of the ruler with dividers. Using this technique, scale drawings can be enlarged or reduced proportionally to any size. There is no limit to the size of plans or drawings which can be copied if the enlarger can be swivelled into a horizontal position, or can be turned on the vertical standard so as to photograph copy laid on the floor. Horizontally, the enlarger can photograph any material placed on

Shavings from the WIZARD'S WORKSHOP

by the Weldwood Wizards with Wood

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Want your short cut or shop trick printed? Send it to United States Plywood Corp., Dept. 125, N.Y. 36, N.Y. If used, we'll send you a one year subscription to this magazine. All entries become our property. None can be returned.

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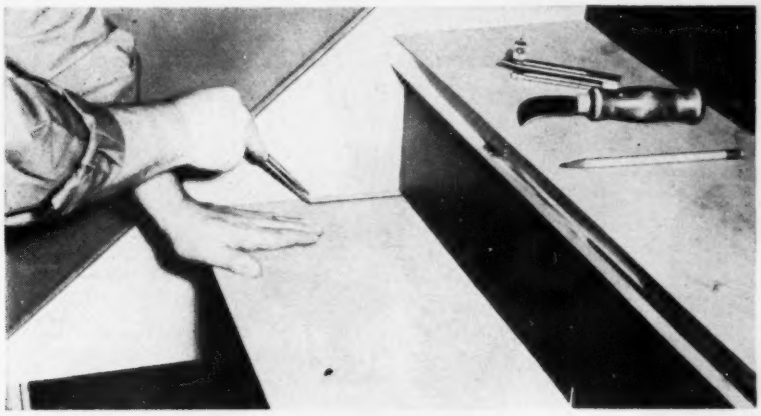
a wall. Care should be taken to hold such material flat, and to check even lighting.

The quality of the negatives made by this method will depend on the quality of the lens used, the kind of film carrier, exposure, and development—as well as all the factors of care and skill which are involved in any photographic effort. But an enlarger is basically a camera and can be used to take, as well as enlarge, pictures. Anyone with an enlarger in his darkroom therefore has a copy camera at his disposal, without having bought any expensive equipment he did not have before.



DON'T THROW THE SCRAPS AWAY!

There's no limit to the uses for left-over scraps of linoleum or floor tile in the home, the makers of Armstrong's Linoleum tell us. In the kitchen, for example, they make excellent place mats and coasters. Counter and sink tops are covered easily with the attractive materials, and a large piece of linoleum or tile makes a colorful breadboard.

Don't overlook the windowsills, especially when flower pots are placed on them. Tile already is cut to the size of a flower pot pad.

Closet floors surfaced with remnant pieces withstand dirt and dampness from muddy boots and dripping umbrellas, and offer a surface that can be cleaned with the swish of a damp cloth.

If you've been searching for a permanent self-covering that is colorful and easy to clean, use a bright-hued spatter linoleum or some other linoleum pattern which lends itself to shelf decoration. Similarly, drawer bottoms provoke a challenge. If linoleum covers them, it will deaden the clatter of silverware and will protect utensils from scratching against the metallic bottoms.

You might try covering the top of an old cardtable with linoleum, or rubber tile, or cork tile. Likewise, tiles or linoleum can be used to resurface desks, writing tables, hobby benches, etc.

Dining room tables surfaced with cork tile now are on the market. If you have cork tile scraps, or can obtain them from a local flooring dealer, a similar finish on your dining room table at reasonable cost can be achieved.

Linoleum is excellent for covering the outsides or bottoms of wastepaper baskets and clothes hampers. Bulletin boards suitable for children's rooms and kitchens can be fashioned from the same materials. And for a scrap book, what is more appropriate than a scrap linoleum cover?

For counter tops and shelves—a surface which is smooth, colorful, and easy to clean. Interior shelving can be covered with "patches"—neatly fitted odds and ends, to look almost like one piece.

As a background for modern pictures; as a pad for flower pots; as material for a wastebasket. Flooring in tile form, especially cork tile as shown here, makes an excellent surface for a damaged cardtable.

Black & Decker tells

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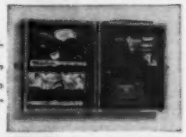

Will kit do many different jobs? B&D Kits drill, sand, grind, wire brush, etc. Many hang on workshop wall.

3. Accessories

Are specialized accessories available? B&D makes drill stands, abrasive kits, honing attachments, and many others.

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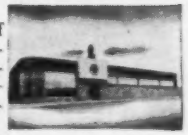

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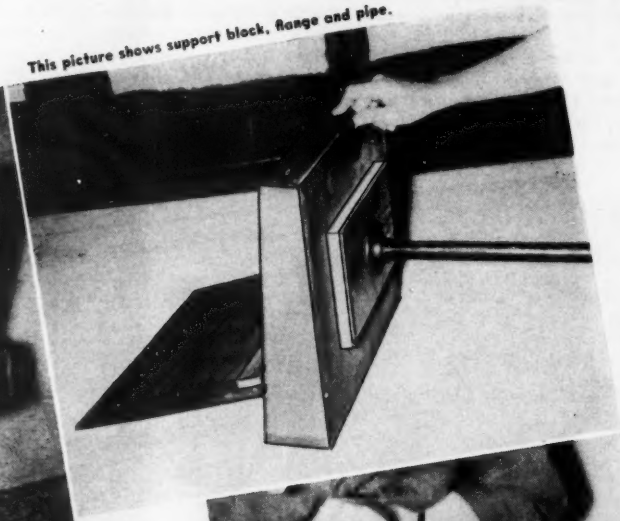
Shows completed desk. Chain keeps desk top from opening too far.



This picture shows support block, flange and pipe.

Front and side views of desk.

Boring hole for ¾" pipe. Shows clamping arrangement.

My Kids love theirs!

DESK FOR AGES 5-10

By WATSON G. SMITH

THIS project will pay off with hours of fun for your tots. You will find it simple and easy to construct in a limited number of spare hours. May be finished in natural, varnish or plastic coat, or paint.

Cut out top and bottom and 3" strip to finish off top, allow for finishing edges after assembly. Cut out and assemble sides and ends of desk. Insert 1"x2¼" board to support ¼"x3" strip of plywood. Lay out bottom, countersink and drill pilot holes approximately 1" in from the side and end of the desk support block. Small finishing nails can be used to fasten bottom and 3" strip of plywood. Holes to be filled later with wood filler. Fasten pipe flange to suitable length of ¾" pipe. Make sure flange is tight enough so desk top won't turn later in use. Locate pipe flange in center of desk support block and drill pilot holes for screws, and secure.

Scribe a circle 5" in diameter on a 1x6x6" board. Cut out circle and divide into four equal parts. These form support braces are for the front leg. Drill and countersink holes as shown.

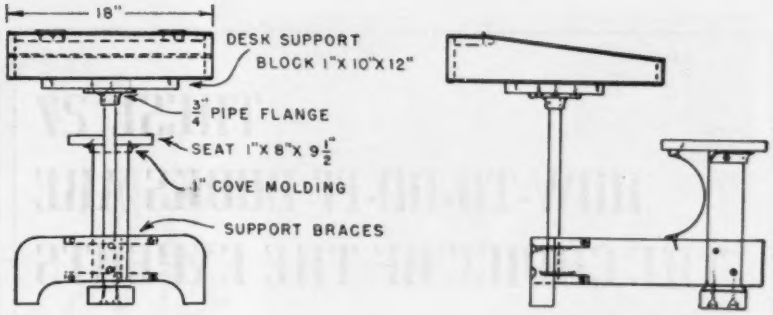
Cut out 2 x 6 to form legs; round corners and sand smooth. Cut 4" off 2x4 for rear leg. Clamp 2x6 and 2x4 in position as shown in photo and bore hole for ¾" pipe. This hole must be slightly smaller to assure close fit.

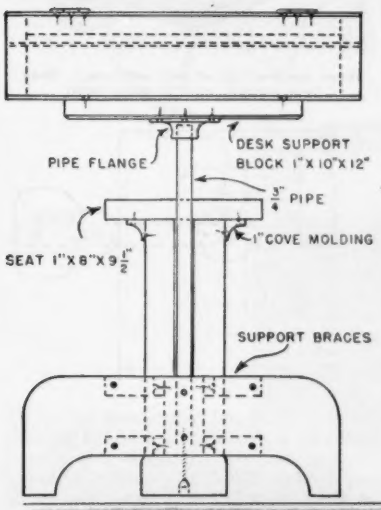
Release clamp and place ¾" pipe in

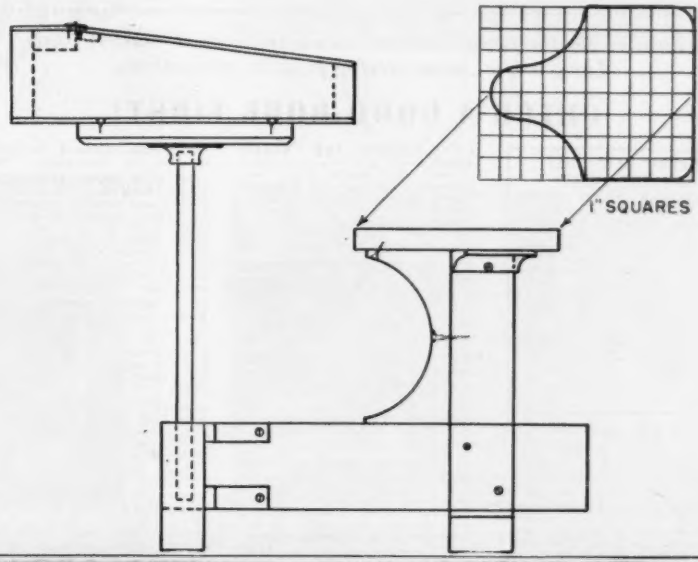
bored hole, and reclamp. Locate and secure four braces. Remove clamp. Line up desk parallel with front leg. Drill holes through 2x6, pipe and into 2x4. Countersink for wood screws. Holes in 2x6 and pipe should be slightly larger than the diameter of the shank above the thread. The screws keep the pipe from turning or pulling out.

Cut out slot in 4x4 to suit 2x4. Cut off other end to length. Drill and countersink four holes as in drawing. Cut out seat, round corners and sand smooth.

Miter 1x1 cove molding to fit around







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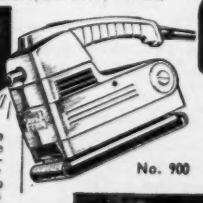

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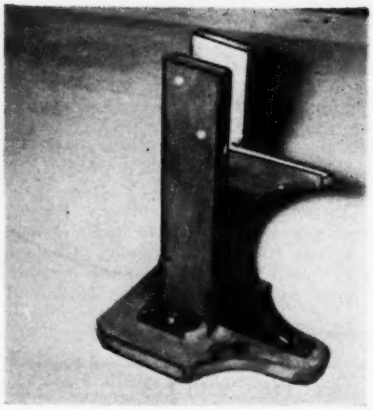
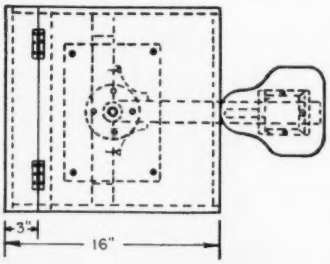


Shows construction of seat and braces. Note cove molding used to brace post.



4x4 post. Drill and countersink for screws as shown in drawing. Center 4x4 on seat; locate and secure molding to seat. Fasten seat to 4x4. Saw 45° chamfer on 2x4x4 back leg. Drill and countersink two screw holes and secure to 2x4. Place 4x4 over 2x4 and make adjustments by sliding it back and forth to suit your child. Secure with four wood screws as shown.

Saw 1x5x11" to suit dimension from under side of seat to 2x4. Lay out and saw arc, allowing about 1" stock at back and ⅜" at ends. Drill and countersink; secure with three wood screws.

A ½x1x16" board tacked on to cover gives the extra thickness needed for hinges. Use small brads for this or clamp in place while hinges are mounted. Hinge screws will secure it permanently. Join cover with 2" brass hinges. A small chain can be fastened to the cover and to the inside of the desk to prevent top from being opened too far and straining the hinges.

Plane and sand excess stock from top of desk. Fill all nail and screw countersinks with wood filler; sand smooth; round all sharp corners.

Gems, Minerals, Gem Cutting

★ *In the diamond saw for gem minerals, diamond powder is imbedded or charged into notches around the periphery, and these slightly closed to grip it.*

★ *Most gems are derived from minerals, a few are organic, a considerable number can be produced synthetically. There are many imitations, while certain natural stones may be dyed artificially and otherwise altered to make them more valuable.*

★ *The amateur gem cutter can buy ready-to-cut diamond saw blades, a 12" diameter costing approximately $12. They give longer service, contain more diamond dust, work faster and longer than hand-charged blades.—Morris A. Hall*

Wagon Wheels

Use them at the entrance to your driveway . . .

Use them, if you have small ones, to dress up your mail box . . .

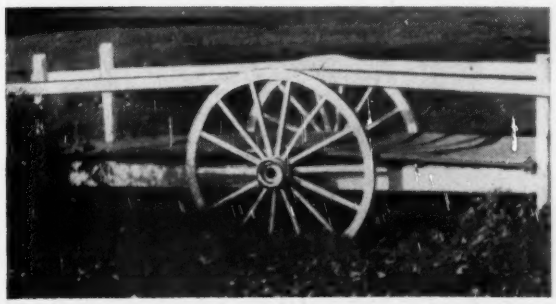
Use them as an unusual porch railing . . .

Use them symbolically on a combination post lamp and mail box . . .

Use them rustically for a driveway entrance marker . . .

Use them as a corner marker, on your lot line . . .

Use them picturesquely as a driveway fence . . .



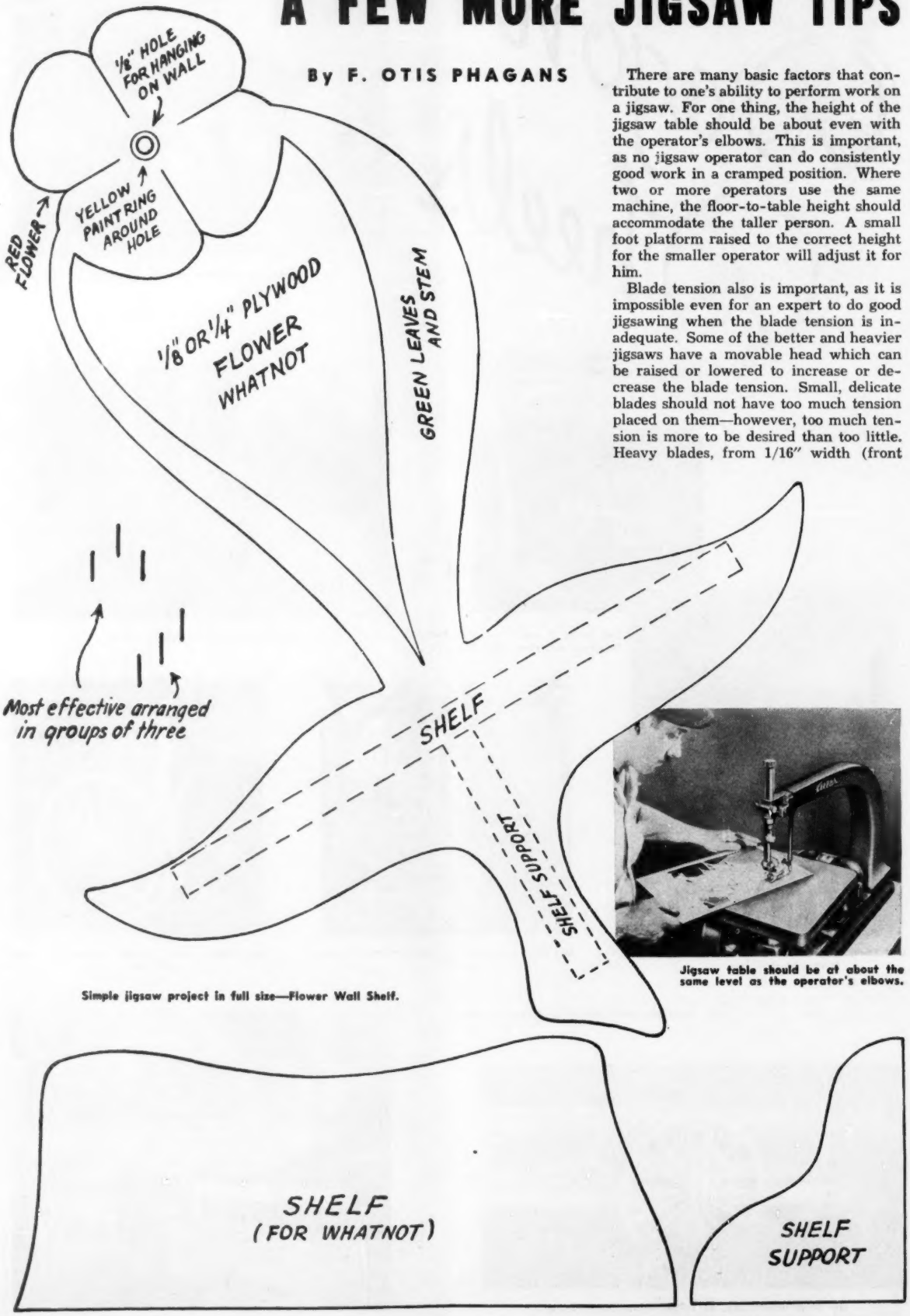
Use them artistically, as a foot bridge support . . .

A FEW MORE JIGSAW TIPS

By F. OTIS PHAGANS

There are many basic factors that contribute to one's ability to perform work on a jigsaw. For one thing, the height of the jigsaw table should be about even with the operator's elbows. This is important, as no jigsaw operator can do consistently good work in a cramped position. Where two or more operators use the same machine, the floor-to-table height should accommodate the taller person. A small foot platform raised to the correct height for the smaller operator will adjust it for him.

Blade tension also is important, as it is impossible even for an expert to do good jigsawing when the blade tension is inadequate. Some of the better and heavier jigsaws have a movable head which can be raised or lowered to increase or decrease the blade tension. Small, delicate blades should not have too much tension placed on them—however, too much tension is more to be desired than too little. Heavy blades, from 1/16" width (front



Simple jigsaw project in full size—Flower Wall Shelf.

Jigsaw table should be at about the same level as the operator's elbows.

to back) or wider, should use all or most of the tension obtainable in the jigsaw head.

Some jigsaws are not built for a variable tension adjustment. To increase the tension on this type remove the coil spring from the head and stretch it until it is 1" or 1½" longer. Use an old dinner table knife blade, inserting it at one end of the spring crosswise to make a T handle. Grasp the T handle in one hand and the opposite half of the spring in the other hand, and pull. Reverse and repeat on the other half of the spring. Before reassembling the head, swab the inside of cylinder and the chuck rod with vaseline or some similar lubricant; also swab the spring. Place rod and spring in cylinder; put from 5 to 8 drops of motor oil around and on the upper end of coil spring and replace the pump washers. The head should be lubricated in this manner occasionally, depending on how much it is used.

Even an expert cannot do good work unless the correct blade tension is used.

Be sure to make this check

Another check that should be made on a jigsaw, either new or used: Turn the jigsaw pulley by hand until the lower chuck reaches the bottom of the stroke. Now, using a pair of pliers, grasp the chuck with pliers and move it right and left slightly. It should have very little, if any, horizontal play. If there is any noticeable play in the lower mechanism housing, drain the crankcase and remedy this condition, as this will affect the accuracy of your jigsawing considerably.

This condition, if allowed to exist, not only affects the accuracy of your jigsawing, but will cause a pounding noise and increase wear on the jigsaw mechanism. Any time the jigsaw develops a knock or clatter when running, check the oil level in the crankcase. If this is O.K., check the pulley set screw on the jigsaw and on the motor to see that they are tight.

For those who use the presser foot on the jigsaw, it is well to remember that the presser foot never should drag on or touch the material being cut, but should be adjusted so that it barely clears the material.

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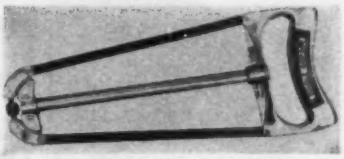
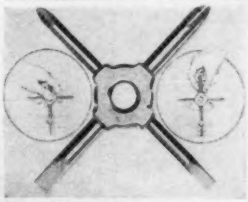
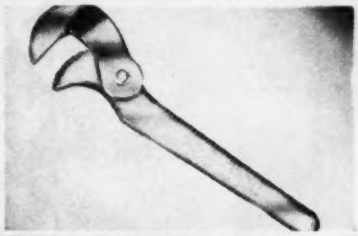




Even My Wife Likes This Screwdriver

Frankly, she doesn't know a claw hammer from a jack plane. But she sure knows she likes my Phil Uni Drive. The one that *used* to be mine she keeps in the kitchen drawer. So I had to get another for my workshop. I want to get one more now—for the glove compartment of my car. It's 4 screwdrivers in one, and a darned practical deal. Two are Phillips recessed head type, and two are flat screwdrivers; all four different sizes. This arrangement gives extra leverage; it also let you "spin" a screw out fast. I really like this gadget.

It's cheap—only $1.00



Simple Tool of a Thousand Uses

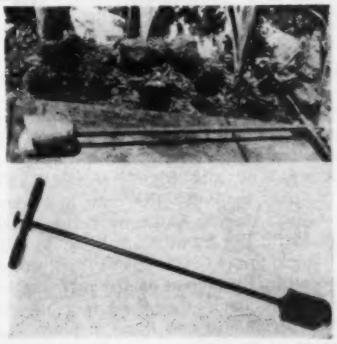
Most workshoppers have more wrenches than they'll ever need. I do. But when I came across this new Ply Wrench I said, "That's for me!" I like it because I can get into places with it that I usually skin my knuckles on when I use a regular wrench. It has a terrific gripping power and a three-sided pull. Automatically adjusts to any size from ⅛" to 1⅛". Measures 7" overall. I use it now more than I do any of the regular wrenches which cost me three times as much, because it's so much faster and easier.

Worth more than its $1.29

Adjustable Angle Jig for Circular Table Saws

Every table saw owner *needs* one or more of these Adjustable Angle Jigs with steel protractor. Protractor eliminates need for ruler. Indispensable for making accurate angle cuts. No clamps or bolts to fasten. Glides along the table fence, carrying the wood with it. Will cut a true, precise taper. Also will taper 1, 2, 3 or 4 sides. 12" length cuts 0° to 23°, and tapers 0" to 4½"; 15" length cuts angle 0° to 24°, and tapers 0" to 6". Made of hard maple with cadmium-coated steel rust-proof clamps.

Priced at $2.95 for 12"; $3.45 for 15"



Dig Easy, Mr. — With Ese-E-Dig

You have to dig some post holes; plant bulbs, shrubs, plants, etc.? This is *really* it. As the blades cut down into the soil, the "cup" between them fills. This raises the disc at the top, between the handle grips. You just lift out the Ese-E-Dig, press the disc to eject the soil—and there's the easiest digging you ever did. You can dig all day and your back will never know the difference. *Now's* the time you need it . . .

A life saver for $6.00

Take It Easy Chum; You'll Live Longer

Hauling nails out of wood the old way is rough on the bursitis. It just about kills me. But this Cat's Paw Nail Puller is the cat's something-or-other. Not only does it make pulling even the big nails easy, but it saves scarring the wood unnecessarily. You can get in tight corners where a hammer won't fit, and you can work just about twice as fast. That spoon-shaped head is what does the trick. It slides under the nail head nice and easy and rocks it out just as easy as that ol' rocking chair. Light weight, 12" long, and oh, so tough.

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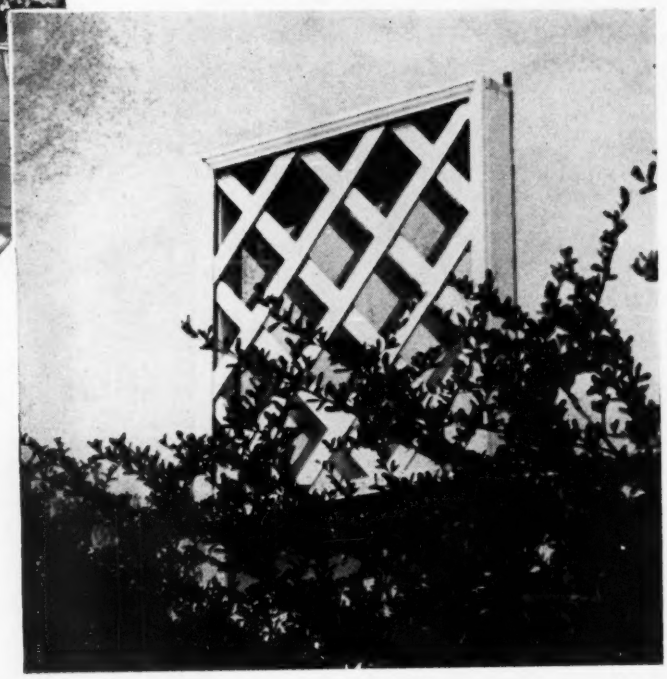
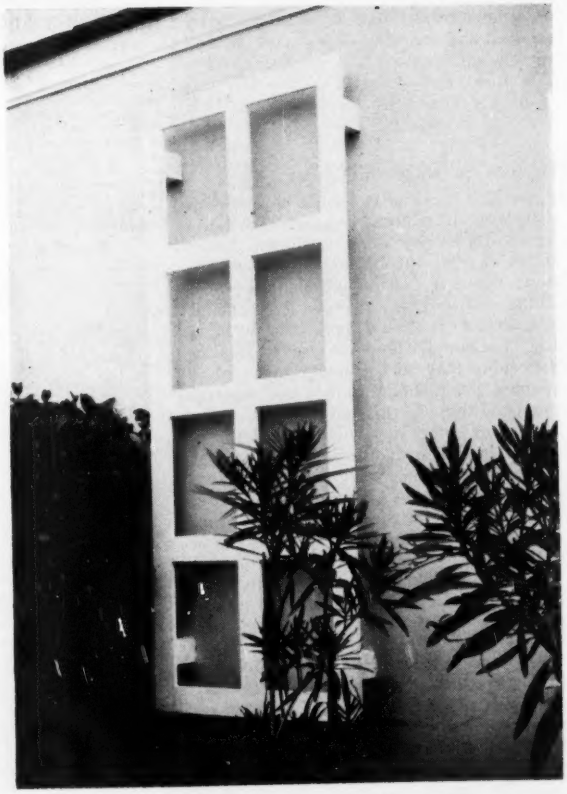
EYE-CATCHERS

By ROBERTA L. FAIRALL

This shadow box and plant shelves unit is especially good for an area in the side or back yard next to a patio or lawn. It makes an interesting spot to display ceramics, so appropriate an addition to a flower garden. (Fig. 6)



One of a pair, this dummy window adds crispness to a large unbroken area of gray wall space facing the front lawn. The other is hung directly above on the second story. (Fig. 1)



This wide trellis gives the eye a stopping place in a long expanse of wall space set very close to the sidewalk. It is decorative in itself or could be used as a plant support. (Fig. 2)

YOU can make a windowless wall space on your home or garage a point of interest with only the suggestion of a window. Here are three inexpensive ways to add the extra bit of trim.

A small latticed dummy window (Fig. 1) painted to match the trim looks well on either stucco, frame or brick buildings. Build the frame 3'x3'. (Fig. 3) from ¾" stock joined with screws and waterproof glue. Fit a cleat on the inside of the frame set back the thickness of two batten strips and nail them in place. Nail battens to the edges of cleats in a diamond pattern and cover front edges with molding. Paint both inside and out and hang with inside corner angle irons attached to both top and bottom. Position them so that screws may be driven into studding. Studding usually are spaced 16" apart on centers and may be located by tapping the wall.

Or build a lattice type trim (Fig. 2) which may, if you wish, also act as a plant support. Build the frame from 1x4 stock, miter the corners, draw them together with corrugated fasteners and angle irons. Join cross members with butt joints and reinforce with mending plates (Fig. 3). If the supports cannot be built into the house, join them to the outside with angle irons spaced so as to drive screws into studding.

A shadow box used either alone or with three flower pot shelves makes an attractive eye-catcher (Fig. 6). Use it for a hobby display shelf or fill it with small potted plants. Make a cardboard pattern for the scalloped frame members and lay out other dimensions directly on the lumber. Use either redwood or cypress heartwood. Join with waterproof resin glue and brass screws. Miter corners of the frame, draw together with corrugated nails and reinforce with angle irons (Fig. 5). Drill holes in the shelves and bottom to allow water to drain out. Join to the

FOR A BLANK WALL SPACE

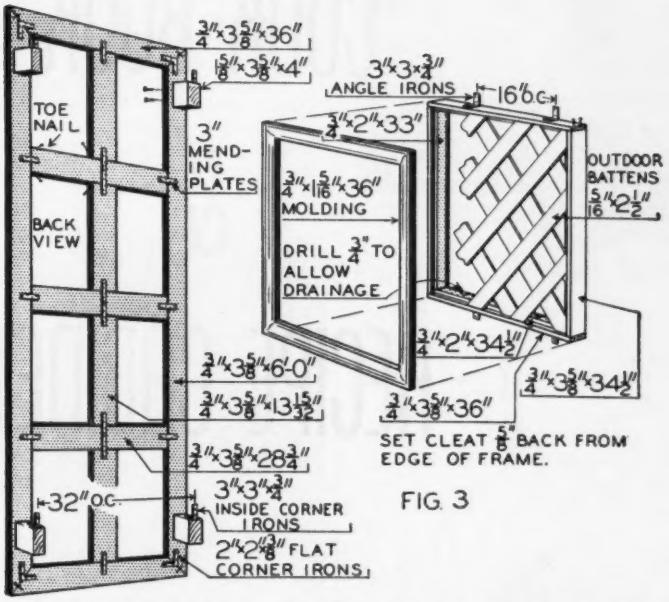


FIG. 3

Assembly and dimensions for dummy window and lattice.

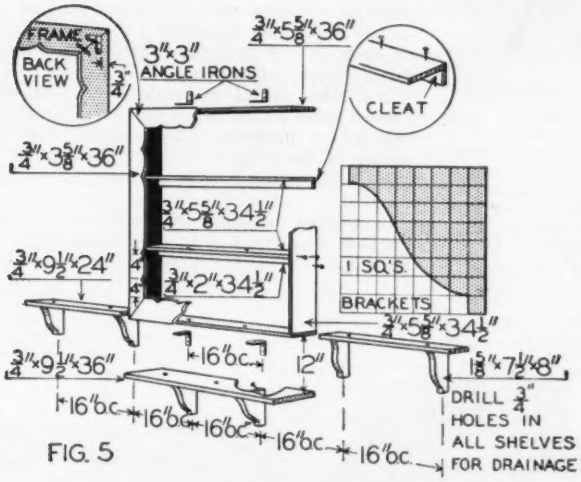


FIG. 5

Assembly and dimensions of shadow box.

BILL OF MATERIALS

No. of Pieces	Description	Size
4	Molding	3/4"x1-5/16"x36"
2	Top and bottom frame	3/4"x3 5/8"x36"
2	Sides of frame	3/4"x3 5/8"x34 1/2"
2	Top and bottom cleats	3/4"x2"x34 1/2"
2	Side cleats	3/4"x2"x33"
	Outdoor battens	5/16"x2 1/2"x28'-8"
4	Inside corner angle irons	3"x3"x3/4"
	Brass screws and waterproof resin glue.	
	LATTICE TRIM	
2	Top and bottom of frame	3/4"x3 5/8"x36"
2	Sides of frame	3/4"x3 5/8"x6'-0"
3	Horizontal members	3/4"x3 5/8"x28 3/4"
4	Vertical members	3/4"x3 5/8"x13-15/32"
4	Blocks	1 5/8"x3 5/8"x4"
4	Inside corner irons	3"x3"x3/4"
4	Flat corner irons	2"x2"x3/8"
14	Mending plates	3"
8	No. 8 brass screws	2" long

outside wall the same as the latticed dummy window. Install brackets for pot shelves over studding with brass screws.

No. of Pieces	Description	Size
	SHADOW BOX	
4	Scalloped frame	3/4"x3 5/8"x36"
2	Sides of shadow box	3/4"x5 5/8"x34 1/2"
2	Top and bottom of shadow box	3/4"x5 5/8"x36"
2	Shelves	3/4"x2"x34 1/2"
2	Cleats	3/4"x5 5/8"x34 1/2"
2	Small pot shelves	3/4"x9 1/2"x24"
1	Center pot shelf	3/4"x9 1/2"x36"
6	Brackets	1 5/8"x7 1/2"x8"
4	Inside corner angle irons	3"x3"x3/4"
	Brass screws, waterproof resin glue	

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COOK BOOK & RECIPE CABINET

By R. KIELSMEIER

THIS cook book and recipe cabinet was designed to serve as a central point for Mama's recipe collection. Locate it near the mixer, open the door, lay the recipe or book on the desk arrangement—and have everything convenient as apple pie.

The sides should be made first. You will find a French curve a very handy tool for laying out the various curves involved. The projection on the lower corner of the sides is for reinforcement, to keep the sides from splitting when excess pressure is put on the desk.

In running the dados for the shelves, cut them from the back edge and stop ¼" back from the front edge of the sides. Clamp a stop on the back edge of the saw

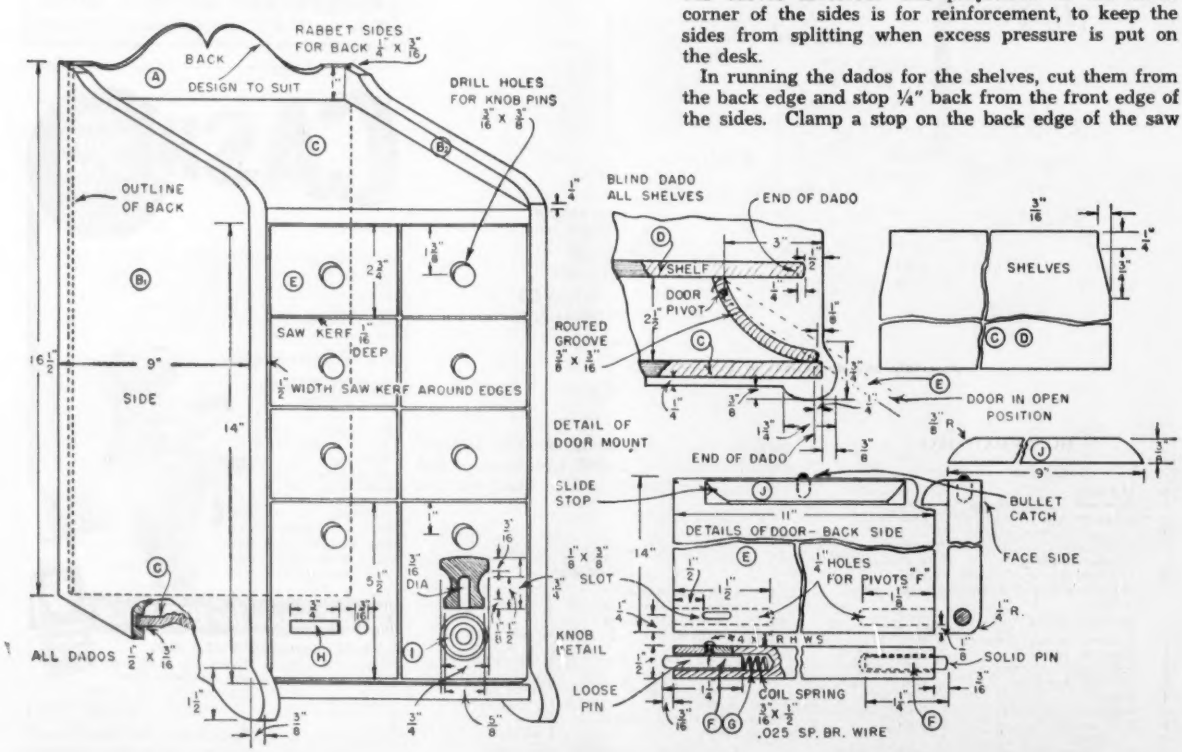


table at the proper distance from the edge of the cutter so as to get the top and bottom grooves uniform, setting the stop so the cut will end ¼" from the front edge of the sides.

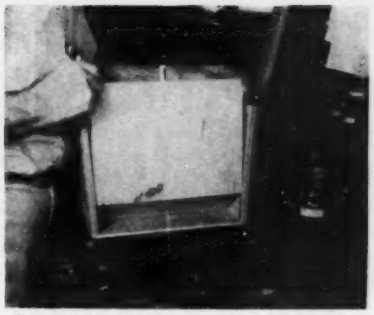
For the middle shelf, move the stop so the cut will end ¾" from the front edge of sides.

The rabbets for the back can be made next, setting the saw fence to make a ¼" cut 3/16" deep. Note that the edges of back are the same length as the sides.

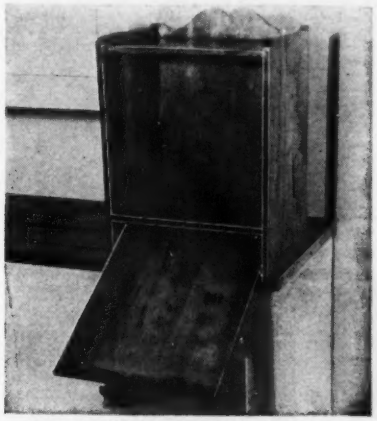
The shelves are cut back on the front edge so they will fit properly into the blind dado. Be careful about the 3/16" dimension. Better undercut slightly for a tight fit.

To assemble the back and sides, set the sides on front edge, place back in position, and put two 1" brads into each edge. Then turn the framework over and try the shelves for fit. If all is okay

Assemble the sides to the back with two brads in each edge.

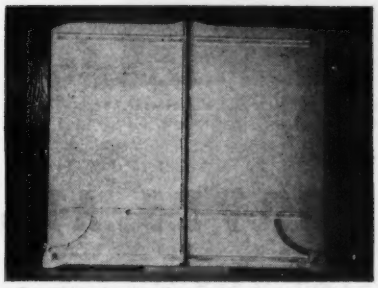


Spread the sides apart and try shelves for fit. Make corrections and glue and clamp.

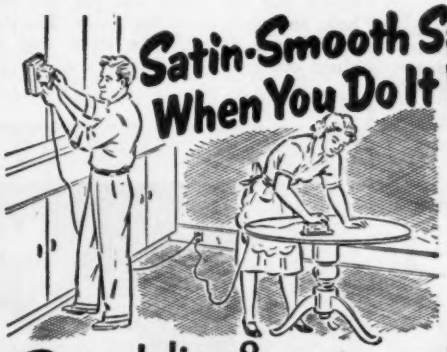


Cabinet with door lowered to form desk.

With door closed, looks like a spice cabinet.



Two sides showing the grooves for the shelves and the routed groove for the door pivots.



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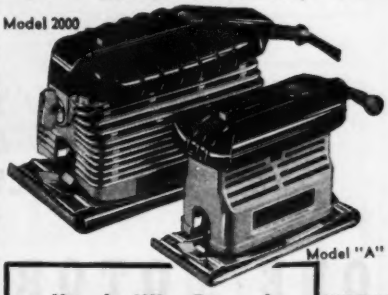

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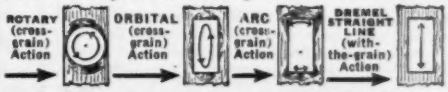

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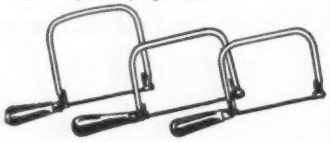

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remove them for glue, replace and clamp tightly.

It is wise to cut the front after the other parts are all assembled. You then can take accurate measurements and fit it before gluing in the solid pin. But first cut in the saw kerfs, a half-width cut on the sides and top; the bottom edge is rounded. Be careful when laying out and drilling the pivot holes.

The loose pin permits putting in and removing the door for further fitting and finishing. The spring was wound in the lathe on a 10d box nail. When setting the stop, screw in the loose pin, let the pin project 3/16", mark the pin with your awl, drill a No. 42 hole. Then insert the screw, holding the pin in the vise to avoid splitting or swelling. Remove the screw, put the spring and pin into the hole, and again insert the screw. The pin must move freely. The slide stop is glued on.

The knobs are turned from 7/8" dowel stock, each one cut the proper length and turned to shape on a screw center. They are attached with short pieces of dowel pins and glue.

The cabinet can be finished with paint or varnish. To paint, use two coats of undercoat and one or more of enamel. To varnish, give it a coat of resin sealer and two coats of varnish. If you want to stain it, put an oil stain over the resin sealer and follow with the varnish. Always rub down each coat with 00 sand paper before adding the next.

BILL OF MATERIALS

A—1—1/4" plywood 11 3/8" x 17 1/2"
B—1—1/2" plywood 9 3/8" x 16 1/2"
B2—1—1/2" plywood 9 3/8" x 16 1/2"
C—2—1/2" plywood 8 3/4" x 11 3/8"
D—1—1/2" plywood 8 1/4" x 11 3/8"
E—1—1/2" plywood 11" x 14"
F—2—1/4" x 1 1/4" Dowell
G—1—Coil Spring
H—8—3/16" x 3/4" Dowel
I—8—7/8" x 3/4" Dowel
J—1—3/8" x 9" 1/4 round
1—No. 4 x 3/8 R.H. Wood Screw
1—1/4" Bullet catch

The operator is removing the V-belt from the pulley of the grinder, preparatory to fitting it to the pulley of the circular saw.

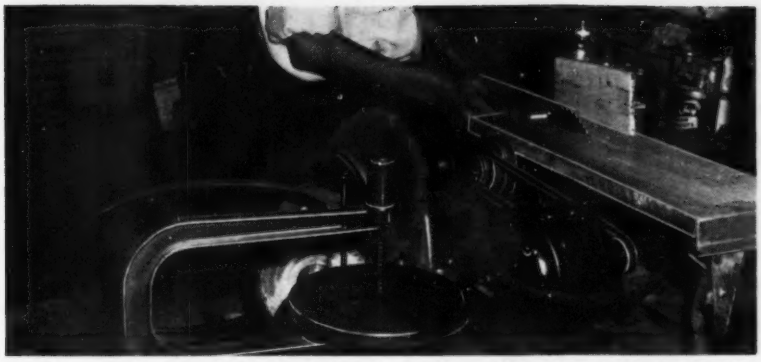
ONE MOTOR SERVES ALL

By WALDO CARLTON WRIGHT

OFTEN the homecrafter finds he has acquired more devices than he has electric motors to operate them with. What to do?

By a simple rearrangement of these tools on his workbench the craftsman in that fix can drive several tools with one motor, as the illustrations show. The trick is to locate the motor at the center of an arc, so that different belts can be attached separately to the driving wheel of the fractional horsepower motor.

In this particular installation a circular saw, wire buffer, sander, grinder, and jig saw are set up to be powered by the same motor which is readily swung to face the



The circular saw now can be operated by the same motor which drove the grinder or jig saw.

appliance it is serving.

To make a similar hookup, screw the base plate of a ⅓ hp. motor to a section of 5" x 7" board. This board in turn should be attached by strap hinges to a block 8" x 8". The hinges permit the motor to tip toward the device the motor is driving. This allows for slight differences in belt length and also assures proper tension at all times on the driving V-belt.

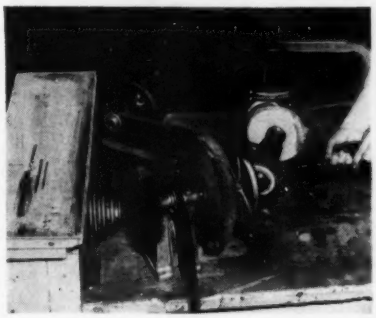
The lower block then is fastened to the workbench by a single ¾" carriage bolt and a large flat washer. The bolt hole is bored directly below the center of the driving pulley of the motor. When the lower block is fitted lightly to the bed of the bench, the bolt permits the motor to be swung in any direction and so line up the driving pulley with the pulley of the circular saw, buffer, grinder, jig saw or lathe.

The jig saw also is set on a block that permits it to be pivoted out of the way, while it also allows the setting of the headstock of a lathe between the jig saw and the grinder.

Should the craftsman add a new tool to his equipment it often is possible to combine some of his present tools—such as the grinder and sander—on one mandrel; and then set a device such as a bandsaw or jointer on the arc.

In the installation pictured here, the same V-belt served the circular saw and the jig saw. The other belts remained in place on the pulleys of the buffer and the grinder when not in use.

Hinging the motor permits its weight to create enough tension on the belt. Also, this tension in the rubber belt takes up much of the vibration of motor and tool.



The motor is swung to face the buffer and the belt attached to this device, so that the operator can polish a metal plate. Note how the motor is hinged to the lower block so that its weight tightens the belt and provides tension. The head of the pivoting bolt can be seen in the lower block, below the center of the motor pulley.

★ The woodcarver's distinction between low and high relief is a slight sinking of the background to throw the design into relief seldom exceeding ⅛ inch in depth on the one hand, and sufficient depth so the wood left upstanding can be rendered into curved forms, rounding and sloping off to resemble Nature, what the carver calls 'modeling' on the other.—Morris A. Hall

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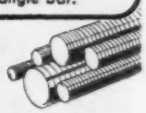

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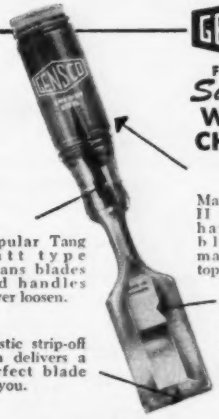

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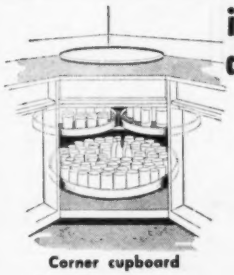

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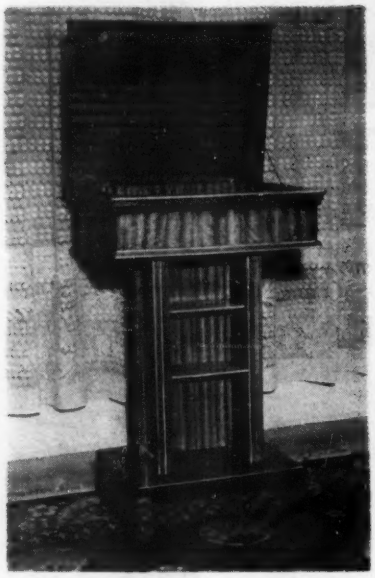
DOES YOUR CHURCH NEED A NEW PULPIT?

Here's a project a group of fellow church members probably would like to work on with you. You'll be glad of their help—especially with the sanding and finishing.

By R. KIELSMEIER

FRONT VIEW



BACK VIEW

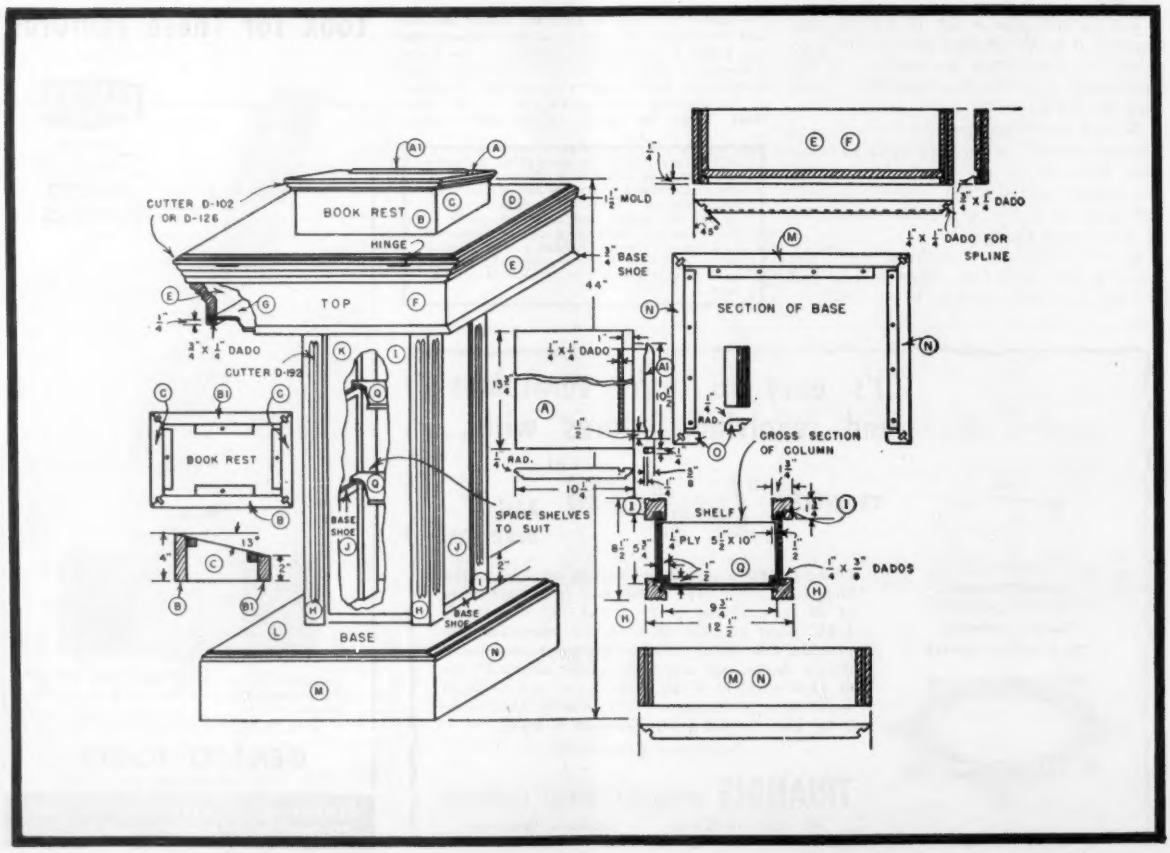
Think of it! All of the ¾" material in this pulpit project can be cut from a 48" x 48" panel. The accompanying sketch shows how it can be done with virtually no waste.

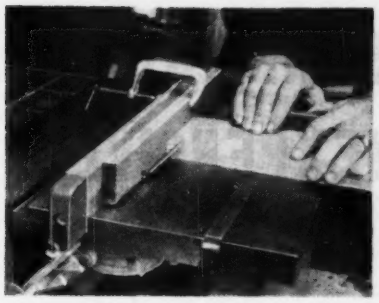
First, prepare all the parts that are to be joined by splines. When assembling the top, two corners can be glued and clamped, then the bottom fitted in before clamping the other corners. While the glue is setting on these parts work can be done on the parts for the column.

You will note that two of the posts are dadoed differently from the other two. These posts and panels need not be glued, but can be assembled with 1" brads. The shelf cleats should be glued to the parts J-J before assembling the panels to the posts.

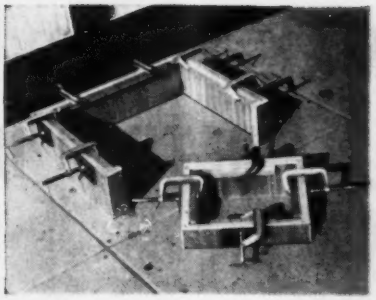
The edges on parts L, D and A can be run at this time, providing part L is fitted first.

Where glue blocks are to be used attach them about 1/32" below the edge of the board. This permits drawing the loose board down to a tighter fit. Another way to assure a tighter joint, as when attaching L to M and N, is to tip your jointer fence 1° and then run the board so the long edge is to the face side of the

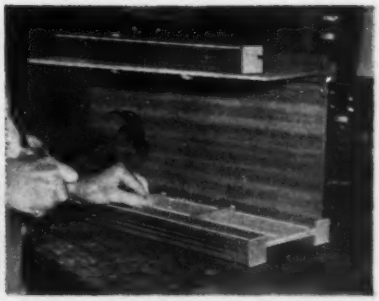




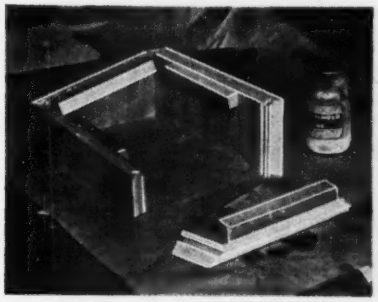
Cutting bevel on parts for top and base.



Glue blocks first are drilled for screws and then clamped into place, 1/32" below edge of board.

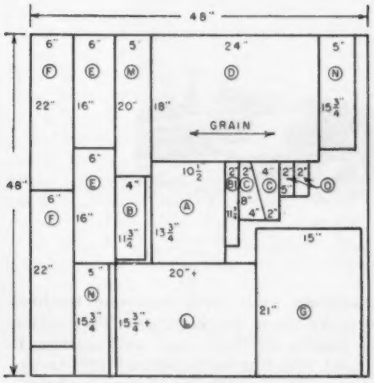


Assemble column with 1" nails, after shelf cleats are glued into place. Do not let panels project beyond ends of posts.



After one side of splines has been glued and set the side part can be placed, with glue, and a clamp used to hold all parts together.

Cutting grooves for splines.



LAYOUT PLAN FOR PULPIT PARTS — SHEET 48" x 48"

board. Fit Part L as nearly as possible before fastening it permanently.

The molding around the top can be attached best before final assembly. Attaching the molding with glue will eliminate nails and will make a neater job.

After cutting the groove into A and making part A1, assemble with glue and use clamps on the ends for a snug fit. Attach this assembly to book rest frame by using the following procedure which describes the assembly of book rest to part D.

The book rest is attached to part D by centering it accurately thereon and making a location mark on each side. Remove the book rest, drill the screw holes from the top side of D, replace the book rest within the location marks, and secure with four of the 1¼" screws from the under side.

Use this same procedure when attaching the column to the base and the top, but use the 2" screws, one in each end of each post. To make a neat job it will be necessary to sink the hinges. Then attach the chain to the inside of the cover and top.

The base shoe molding around the upper and lower ends of the column is fitted closely and glued into place. Where the raw edges of the panel board are exposed a tinted wood filler should be used, a coat of resin sealer applied to the entire project, a coat of suitable stain applied and then varnish. If walnut, oak or mahogany are used, a filler coat will be required after the sealer.

MANY WORKSHOPPERS PREFER TO WORK WITH FULL SIZE PLANS
You'll find several good ones in this issue of Homecraft & The Home Owner: the Pin-Up Lamp on pages 330 and 331, the Jig Sawed Shelf on pages 350 and 351—and, of course, the six projects advertised on page 364.

Build this **tilt-back lawn chair** *for sun-bathing . . . relaxing!*

get complete detail drawings and easy-to-follow directions in

FREE PATTERN KIT 323

. . . along with the picture-packed booklet, "Enchanting Homes of Western Pines." Write for it to Western Pine Association, Dept. 323-O, Yeon Bldg., Portland 4, Oregon.

Two evenings is all it takes to build this lawn chair—and the long-lasting, weather-resistant woods of the Western Pines* will let you enjoy it through many a summer! It's designed to tilt backward or forward with a slight movement of head and shoulders.

You'll want to build two or more of these restful chairs—and it's economical to do so with the Western Pine woods. They cut clean and accurately—finish to your choice of colors without grain-raising. Ask your local lumber dealer for an estimate!

the Western Pines

* IDAHO WHITE PINE
* PONDEROSA PINE
* SUGAR PINE

YOU CAN MAKE THIS SUN ROOM RATHER INEXPENSIVELY

By PERRY S. GRAFFAM

Fig. 1

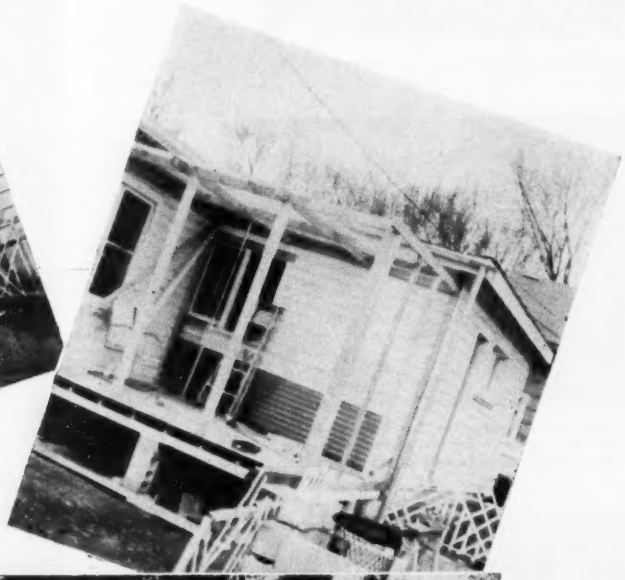


Fig. 2

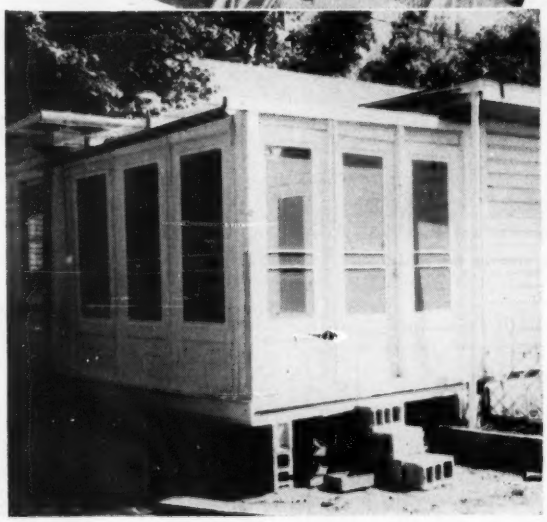


Fig. 3

IN the early spring of 1952 I made my one-car garage into a two-car garage, see *Homecraft & The Home Owner* for July-August 1952. Later that year I added a 9′ x 9′ workroom to the rear of the garage (see Fig. 1). This left a vacant corner 9′ x 11′, an ideal place for a sun room, as two walls were already in place.

The exposure would be from the west and south, thus supplying plenty of sunlight in the early spring, summer and late fall. To obtain maximum benefits of the sun's rays, a translucent fibre glass roofing was used. This roofing allows 90% of the sun's rays to pass through, yet it diffuses the light so that it is glareless. The material is light to work, yet strong —and it can be used for any weather condition. Because this material is so light, a much lighter framing was used for the roof than would be required to support a wooden roof.

I used combination storm doors for the two walls, which also was a saving over regular windows and screens, as again a very light framing was required. With full length screens and windows, more air can circulate in summer and more sunlight is available in the cooler months. This construction made it possible to build the room for a few hundred dollars.

A frame of 4 x 4's supported on cement blocks, with rafters 16″ on centers, was floored with hard pine flooring (see Fig. 1). At this point, the two garage windows were removed, the opening cut out with an electric saw and framed to fit a 30″ combination storm door. The two windows in the workroom also were reworked, to be hung horizontally, and hinged to each other so that they would fold one up over the other. They can be fastened to the ceiling if desired, leaving a large opening to the work room which provides more light and ventilation.

The framing for the roof and walls was put up next. Three 2 x 4's were used for the corner post, the roof rafters were made in the form of six large squares approximately 3′ x 3′ each (Fig. 2). It is better to miter the 2 x 4's where they cross each other. The studding on the south wall were on 30″ centers and the west wall 36″ on centers. The width of the combination storm doors governed these measurements.

After that the roof was added. The transparent material comes in 30″ widths and is easy to install. Place the first section and drill holes for nailing, using aluminum nails with neoprene washers to make them weather tight. The section is placed so that one corrugation is lapped, and this lap cemented with translucent adhesive. Nail as before and continue for the balance of the roof. The excess material can be trimmed off with an ordinary saw.

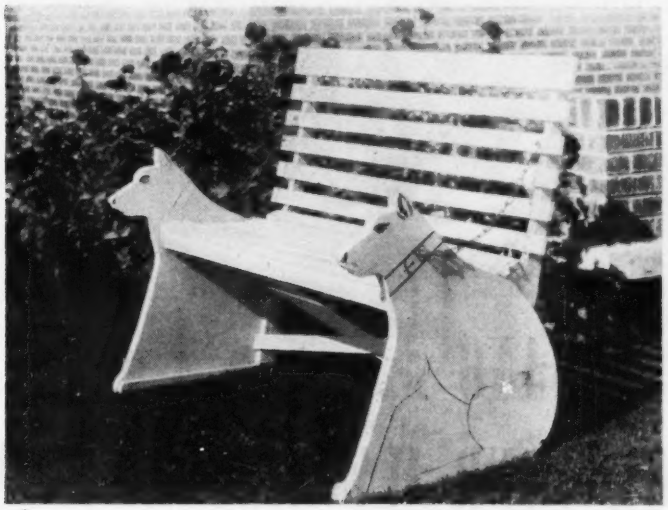
Because the roofing is corrugated there are openings where the material lays on the framework. For the outside walls it is best to use a corrugated contour moulding of metal, wood or rubber to seal out the weather, insects or vines.

With the roof in place the combination

storm doors are next installed. Place the doors between the 2 x 4 studding. They should fit tightly. Next I applied ¼" round moulding on both sides of the doors. No other fastening is required. It may be necessary to fill in above the doors with a 1" board cut to fit. The center door on the south side is hinged and fitted with a knob and latch. No changes were made in the garage or work room roofs as the porch roof is slightly lower than these.

Give the inside and outside two good coats of paint (Fig. 3). The steps are not shown in the photos but they were added later. The room was wired for two ship lanterns and a fluorescent circle fixture in the center of the room, together with several outlets for radio, etc.

The ceiling rafters were covered with a 3" trim to give a mission effect. In wiring the center fixture, the trim was grooved out in back to allow the loomwire to be concealed. In the summer, the screens are used and to provide privacy, morning glories were planted. For fall and early spring the glass windows are used with shades for privacy. The question of the snow load has not come up, but should we have a very heavy amount I will place a 2 x 4 in the center of the room, until the snow melts or can be removed.



"DOGGY" BENCH DELIGHTS CHILDREN

By ROSE AUSTIN

Each of these dogs is 24" high to the tip of his ear and 22" wide overall. They are sawed from wide 1" pine, cypress, or other durable wood. If a board of sufficient width cannot be obtained, narrow pieces may be doweled and glued together with waterproof glue.

The grain should run the long way of the dog's body to favor the ears and nose, which are the weakest parts. Cleats 1" square are screwed on the inside at the bottom as reinforcement. The wider and slightly curved cleats, which support the seat strips, also give additional strength.

The seat is 40" long from dog to dog, and about 16" above the ground. The uprights which support the back are 1¼" x 2" x 35", tapering to a width of 1¼" at the top. Oak or other hardwood is used for these and also for the strips, of which the following are required: one piece ½" x 3" x 40" for the top of the back; five ½" x 1¾" x 40" for the remainder of the back; and five similar strips for the seat. A rounded molding is fastened to the front of the seat.

All the parts are screw-fastened together, and two braces which cross in x-fashion with a half lap joint at the center are screwed to the front edges of the rear uprights, underneath the seat. For a nice finish give the wood a coat of boiled linseed oil; allow it to dry thoroughly, then apply two coats of outside white paint. Use black paint for the finishing touches to the dogs. Add the two chains, which run from screw eyes in the "collars" to the back.

MOST WORKSHOPPERS ALSO ARE GARDENERS

Homecraft & The Home Owner always features garden projects in its summer issues. For instance, in this issue: "Wagon Wheels" on page 349; "Eye Catchers For a Blank Wall Space" on page 352; "Doggy Bench Delights Children" on page 361; "Fence Improves Entry" on page 364; "Your Umbrarium Need Not Be An Eyesore" on page 365—and the round-up of previously published articles on garden projects, page 371.

RANDOM NOTES

A short piece of seamed steel tubing with the seam open provides a handy sanding block for smoothing scrollwork. The abrasive paper is merely wrapped around the tube, the seam of which has been spread slightly to permit insertion of the ends of the paper. When released, the seam will close and hold the paper tightly.

When a large quantity of glue has to be heated and no pot is available, a good one can be made in a few moments. Just get a 25c galvanized iron pail at the hardware store and pick up an empty 5 gallon oil can at a neighboring garage. With the tin snips cut the oil can off halfway from the top, and bend the sharp edges over toward the inside and hammer them flat, so that there will be no danger of cutting one's hands. Fill this part about half full of water, put the glue in the pail and set the pail in the can.

A clay pipe can be used as a crucible by breaking off and plugging the stem.

Corrosion in hot water or steam pipes can easily be prevented by adding ½ gallon of water glass to the water supply and letting it circulate for a day or so before the furnace firing is discontinued. The water glass forms a coating on the inside of the pipes, which effectively prevents rust after the water has been drained out.

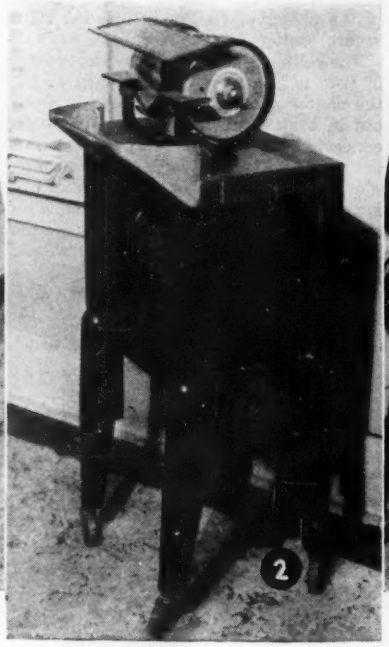
When fastening screwhooks in ceilings or other places for ceiling fans, fixtures, gymnasium equipment, etc., try the following method. First drill a hole a little smaller than the screwhook and then insert another hook in the brace instead of the bit. Start the screwhook into the hole and drive it home.

When you wish to light a camp fire and discover that you have no matches, disconnect a spark plug wire at the plug, saturate the end of a stick or cloth with gasoline and hold it between the spark plug and the end of the wire so that the spark will light the gasoline.

A good place to carry spare grease is in the rear hub caps.

If your potted ferns seem to wilt and die from no apparent cause, it is possible that they are being attacked by small worms that feed on the roots. A good remedy for this trouble is to bury a number of sulphur matches in the soil about the roots. The moisture will disintegrate the sulphur and this will kill or drive off the worms.

One of the first places to show wear on the work table of a kitchen cabinet is usually along the front edge. When this happens, examine the underframing of the table top to determine whether it can be reversed. This part on some cabinets is simply held with wood screws which can be removed easily, and the top placed end for end to bring the marred edge at the rear where it is less noticeable.



TRY THIS ON YOUR PIANO . . . OR YOUR WASHING MACHINE

Cigar boxes, tobacco cans — — Mr. James finds a use for them all in his well-equipped workshop!

AS AN engineer, J. C. James of Aurora, Illinois, finds it natural to have a hobby of working with wood, wood products and metal in his own shop.

A feature of his machine tools is their mobility. In several cases he utilized the chassis of old washing machines as the mobile bases for power tools. Nice thing about his various projects was their low cost and the exercising of inventive skills in carrying them to completion.

Creating a mobile sanding machine from the motor-equipped base of an old washing machine was a cinch. To cover the opening left by removal of the tub he inserted a piece of Masonite Presdply and then built up the height with 2 x 6's cut into circular pieces and topped with a piece of ⅛" tempered hardboard for a durable wearing surface. All this was painted to match the chassis. In addition to its mobility and convenient height the old washing machine suspended motor mount was made to order for proper belt tension. Also the motor is out of the way and protected from sanding dust.

From a junk yard he obtained another washing machine stand which still had the motor and its mount. To protect the motor from dust he enclosed three sides and the bottom of the stand with tempered hardboard, put on a lumber top and a wearing surface of the tempered board. This stand provided a rigid mobile base for his grinder. An interesting feature was his use of the wringer drain, which he inverted and attached to the top to catch the grindings and carbide dust. He also hinged a piece of Plexiglass, with taped edges, to the guard, as a safeguard against flying sparks.

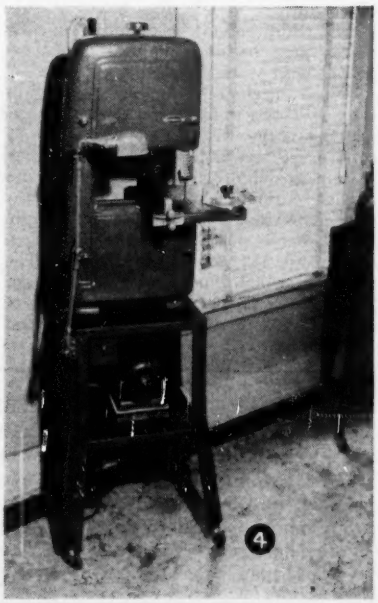
He did a major rebuilding job converting a small 7" tilting table circular saw

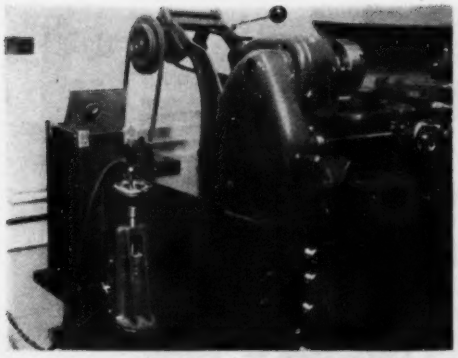
Photo 1. Mounted on the chassis of a discarded washing machine, this sander was built up to height. Its mobility is an important feature.

Photo 2. Legs of another washer were used for a grinder stand in the home workship of J. C. James, Aurora, Illinois. Note the features permitting cleaner operation—the sides, top and bottom enclosures with tempered hardboard, the taped Plexiglass eye guard and the inverted wringer drain to catch the grindings.

Photo 3. Here's an 8" tilting table saw, converted from a 7-incher. The old small metal table top of the saw was enlarged with ⅝" Presdply and laminated 3/16" Tempered Presdwood in which grooves were provided to track the miter gauge. Hardboard also was used to form a bench top and accessory shelf.

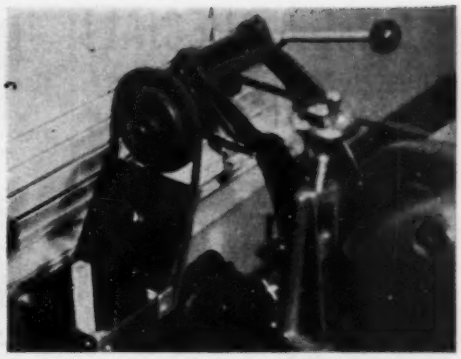
Photo 4. How he converted an ordinary stand into a table for his 12" band saw is shown here. The chief operations were installation of tempered hardboard for the top and a floor under the motor mount. Gasketed holes were provided for the motor belt. Covering the stand in this way prevents sawdust from reaching the motor.



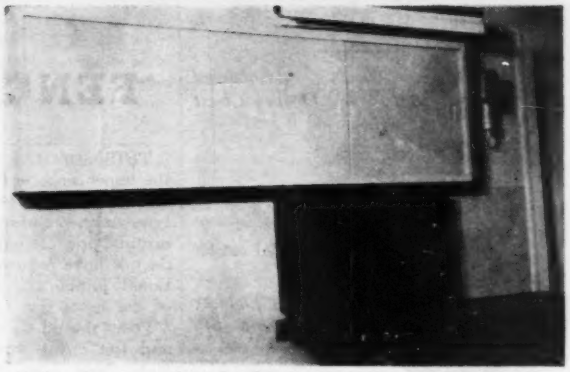


Shown here is a compartment built of tempered hardboard for the milling attachment of his metal turning lathe. Visible at the right is the piece of hardboard laid over the bench top to catch oil drippings and shavings. At the left front of the bench, four drawers constructed of ¼" tempered hardboard provide storage for lathe chucks, attachments and cutting tools.

This is a closeup of the storage box for the milling attachment.



Drawers made of cigar boxes which contain egg-crate type dividers give the James workshop ample classified storage. Two boxes are attached to a piece of tempered hardboard. Dividers are made also of the tempered material.



Tools and parts are kept dust-free in this cabinet. The sliding doors are panels of Masonite Leatherwood which slide in wood channels. Openers are inserted bottoms of tobacco cans.

into a full size 8" saw. First he bought a stand and topped it to support the saw with ⅝" Presdply. The small metal table of the saw then was enlarged with the same material on top of which two pieces of laminated 3/16" tempered hardboard were glued. Grooves were provided for tracking the miter gauge.

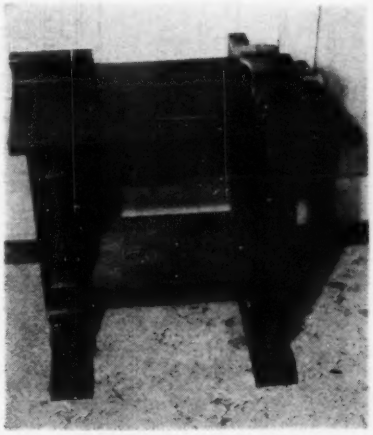
He also made a dado insert of laminated tempered hardboard. Metal angles fastened to the front and back of the table were used to fasten the track of the rip fence and as a bearing point for the clamp at the back of the rip fence. The rip fence, miter gauge, guard and 8" carbide tip blade were purchased.

On the framework around the legs he inserted some pieces of hardboard, so he now has a place for keeping his miter gauge and other accessories when they aren't being used. The ½ hp motor, 3450 rpm, mounted below, operates this saw efficiently at maximum depth of cut.

Another project was simple, effective and inexpensive, involving the conversion of a standard stand for a 12" band saw into a table. He simply topped the stand with ⅛" tempered hardboard. This provided a storage surface for the rip fence and miter gauge. It also prevents sawdust from falling into the motor.

Holes were cut for the belt and for the bolts with which the legs of the saw were fastened to the table. He used a leather gasket as a loose seal around the belt holes to prevent sawdust from reaching the motor. On the lower stand he laid some pieces of hardboard next to the motor for additional storage space.

Mr. James also incorporated some cleaner-operation techniques on his metal turning lathe. For example, he laid



This heavy-duty workbench is made of massive furniture parts and topped with 5/16" tempered hardboard, which provides a durable working surface. Note the rail section at the left rear.

loosely over the bench top under the lathe a tray from which oil drippings and shavings are easily removed.

At one corner of the bench he made a tall box of the hardboard, using triangular wood pieces for corner posts. In it he keeps the milling attachment. He installed thin gauge metal corners designed to seat the ¼" hardboard cover. For a knob, he turned a piece of wood on the lathe. Also, below the left front of the bench, four drawers were constructed of ¼" tempered hardboard for lathe chucks, attachments and cutting tools.

Old cigar boxes are the nucleus of a 22-drawer cabinet which Mr. James finds indispensable for classifying and storing nails, screws, nuts and bolts, washers, etc.

To make one drawer he set two boxes side by side, their short sides facing front. To hold them together and serve as a slide he glued to the bottoms a piece of ⅛" tempered hardboard, smooth side down. For uniformity he glued a new front of hardboard to each pair of boxes.

To the sides of the cabinet he nailed strips of the hardboard as supports for drawer slides of the same material. The slides are removable.

Inside each drawer he made egg-crate type dividers, again of ⅛" tempered hardboard. There is a varying number of compartments—as many as 16 in the shallower top drawers.

Over the chest of drawers he built a wall cabinet of lumber. Then he inserted doors of Masonite Leatherwood, an embossed hardboard, to run in wooden tracks. Handles, instead of the usual metal inserts, are the bottoms of tobacco cans with only ⅛" of their sides remaining. Placed in slots which were cut into the door, the cans have their edges flattened and taped.

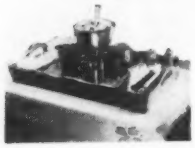
Shelves inside have bottles of fasteners and other shop items at eye level, and the cabinet also houses numerous tools.

Mr. James fashioned a heavy-duty bench from scrap pieces of hardwood. It is 3' wide and 20" deep. Legs were taken from an old bed, and the top once was the top of an upright piano. The working surface is 5/16" tempered hardboard glued to the wood and further anchored with countersunk screws. For heavy work this rugged bench supports a metal vise and section of iron rail.

Photos courtesy Masonite Corporation

SUMMER SPECIAL!

ALL FIVE FULL SIZE PLANS ONLY $2.00



Colonial Beverage and Snack Server

A Colonial tray of traditional design but with a modern twist—featuring a take-out tray with receptacles for pitcher and six glasses. Also has compartments for silverware, snacks, etc. For full details see page 266 of May-June issue.

FULL SIZE PLAN No. SBS-5 . . . 50c

Colonial Dowry Chest

A traditional piece characteristic of Colonial furnishings. Its lines represent the best in design of the day. Serves many purposes besides being very decorative. Can be made of pine, birch, cherry, oak, fir, beech—any of the home grown woods. For complete description and additional illustrations see pages 332 and 333, July-August 1953 issue of this magazine.

FULL SIZE PLAN No. CDC-1 . . . 50c

Triple Decker Magazine Table

This three-tier magazine table, server, snack table, plant stand—table of many uses—favors the Colonial. Any convenient wood and finish will prove suitable. Its simple, sturdy construction makes it a popular furniture project. For additional illustrations and detailed description see page 26, September-October 1953 issue of this magazine.

FULL SIZE PLAN No. TDT-2 . . . 50c

Combination Smoking Stand & Magazine Rack

An orginal design. Ideal for living room or den. Maple or other hardwood of similar texture recommended. Complete description, with eight photographs and detail drawings, appear on pages 88 and 89 of the November-December 1953 issue of Homecraft & The Home Owner.

FULL SIZE PLAN No. SSM-4 . . . 50c

Reproduction of Early Milking Stool

Our forefathers used it in the milkshed. Now you will find it used as a TV seat, foot stool, plant stand, fireside bench or any one of a possible half dozen other purposes. A furniture piece of pure charm as well as utility. For additional details and photos see page 144, of the January-February 1954 issue of this magazine.

FULL SIZE PLAN No. MS-3 . . . 50c

- ☐ All five plans at special price of $2.00.
- ☐ No. CDC-1, Colonial Dowry Chest—50c.
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- ☐ No. SSM-4, Combination Smoking Stand and Magazine Rack—50c
- ☐ No. SBS-5, Colonial Snack Server—50c.

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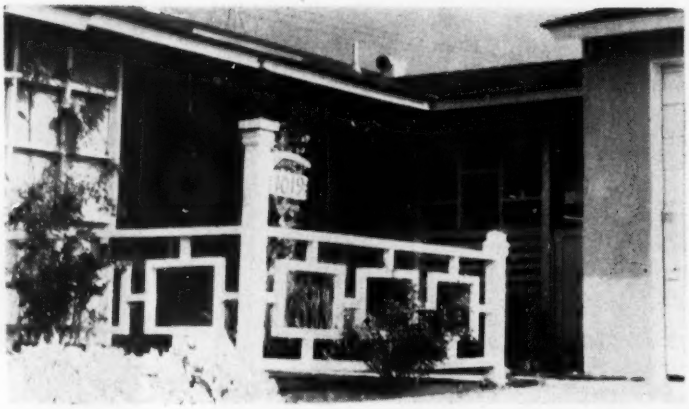


FENCE IMPROVES ENTRY

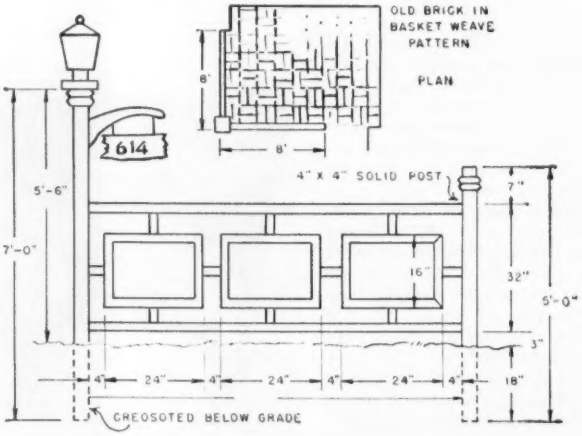
by HI SIBLEY

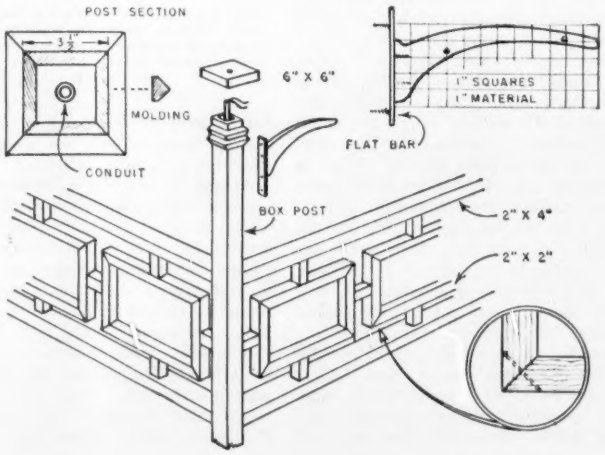
THIS attractive fence adds greatly to the appearance of its home and is built of stock lumber. The lamp post is a box type with conduit inside, and in the original the corners are mitered. If you do not have a power saw, make conventional joints, and the mitered members of the fence can be cut in a miter box.

Posts should be creosoted below grade, and the entire structure painted white. Note how arm for house number is screwed to a flat bar which in turn is screwed to the lamp post. Lamp itself is available at hardware stores or mail order houses.

BILL OF MATERIALS

- 32 lineal ft. 2" x 4" fence stringers pine or fir.
- 36 lineal ft. 2" x 2" fence.
- 28 lineal ft. 1" x 4" box post.
- 1 piece 4" x 4" x 60" solid post.
- 1 piece 1" x 5" x 24" number board and arm.
- 1 piece flat iron ⅛" x 1" x 7", for arm.
- 1 piece electrical conduit to suit.
- 1 piece old time lamp, and cable.





YOUR UMBRARIUM NEED NOT BE AN EYESORE

By HI SIBLEY

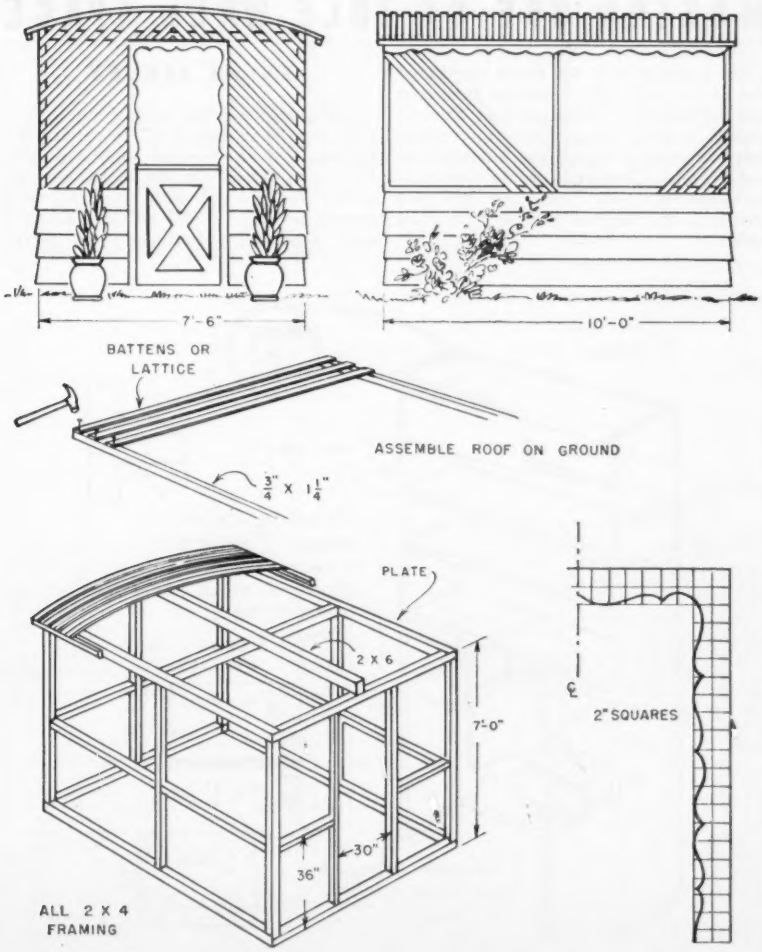
IT costs a very little more to build an attractive slat house for your shade-loving plants than just a sketchy shelter, and here is a design that can be adapted to your available space by altering the dimensions.

Stock battens or lattice material, spaced its own width and installed diagonally, eliminates the need of bracing the framework, construction of which is simplicity itself. Assemble the roof flat on the ground, then place in position and bend over the ridge piece, nailing each slat to the plate. If you wish the roof rain-and-drip proof, cover with translucent Sun-Ray Mesh, consisting of cotton cord tightly sealed between two layers of cellulose acetate. It is guaranteed for three seasons and the entire roof can be covered for about $6 (Sears Spring-Summer 1953 catalog). It should be drawn snugly over at battens and tacked at the eaves.

Other construction is illustrated in the perspective drawing. Paint the door and scroll-sawed members Chinese red, which will be in pleasing contrast with the weathered lattice and siding. The floor should be excavated about four inches and filled with gravel or cinders.

LIST OF MATERIALS, Umbrarium

9 pieces 2" x 4" x 7'-0"
6 pieces 2" x 4" x 10'-0"
7 pieces 2" x 4" x 8'-0"
32 lineal ft. ¾" x 4", scroll-sawed members
114 lineal ft. ¾" x 8", pine or fir, sides, door
40 battens ⅜" x 1½" x 8'-0", roof
2 pieces ¾" x 1¼" eaves
Lattice to cover 132 sq. ft., spaced own width
1 pr. hinges, 1 latch for half door
Nails, spikes
80 sq. ft. Sun-Ray mesh, if rainproof roof is desired



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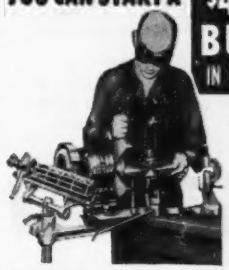

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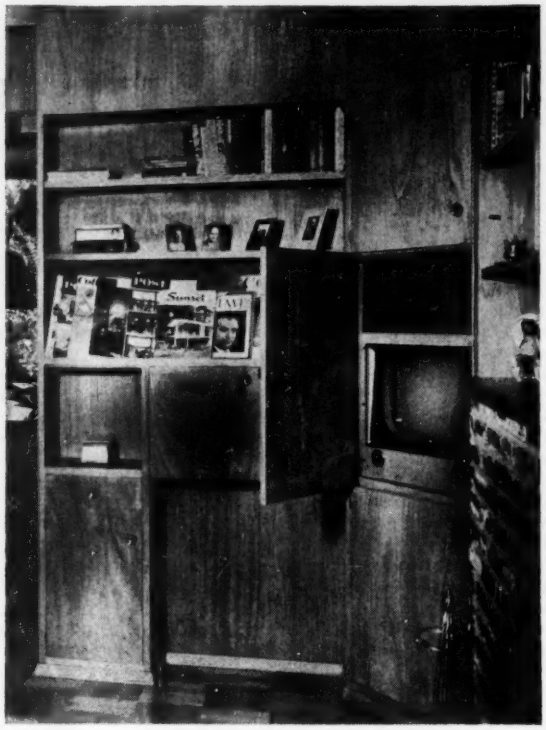

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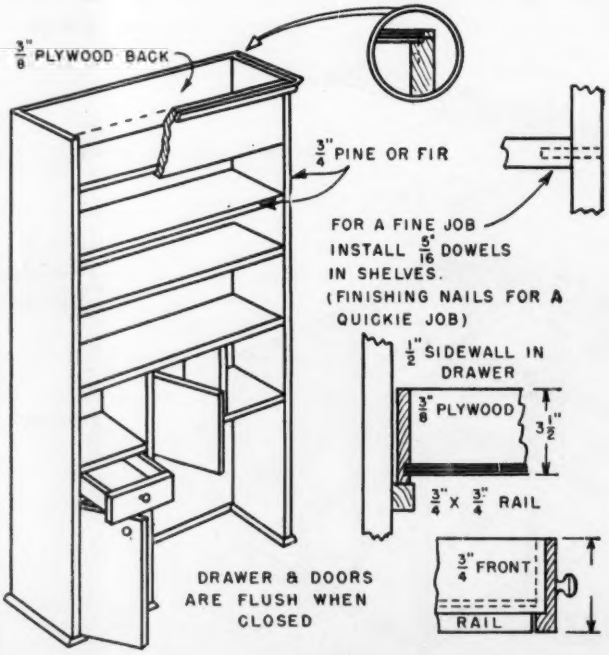
MAKING USE OF IDLE WALL SPACE

By HI SIBLEY

Got a blank wall not doing anything? Put it to work by installing this neat unit of shelves, cupboards and drawer, which extends from floor to ceiling. Select a wood to match the interior trim and go about construction in the conventional manner, rabbetting the side members to receive the 3/8" plywood back.

For a workmanlike job the side members may be rabbetted 1/8" to receive the shelves, and front edges concealed with 1/4" cover strips. Or, for a quickie job, secure the shelves with finishing nails driven in with a nail-set and plugged with wood pulp. Perhaps you'll prefer



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MUSIC CABINET

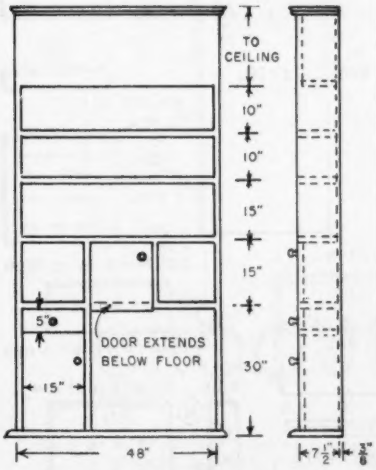
By HI SIBLEY

THIS cabinet will accommodate your radio, phonograph, records, a few books—and has three roomy storage compartments besides. It is designed for the simplest kind of carpentry; all parts are shown cut to size. In the case of doors and sliding shelf for the phonograph, dimensions should be a whisper less than indicated so they will not bind.

Half-inch plywood is used throughout, except the ¼" plywood for the record partitions and back panel and, of course, the cleats. These should be hardwood and assembled with No. 9 flat head wood screws. Apply furniture glue to all contacting surfaces. Since each member is lettered, the builder cannot go wrong in assembly.

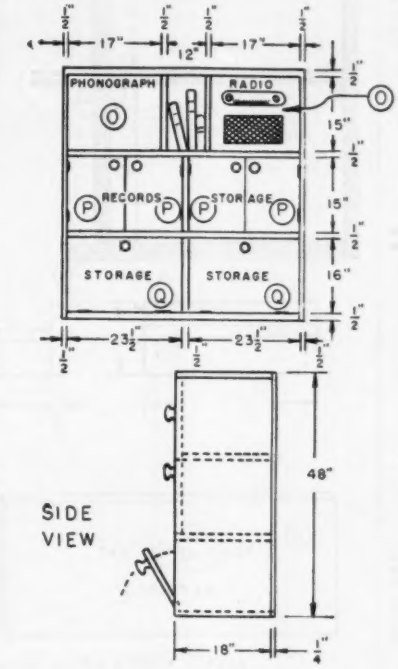
First mark locations of shelves on the side members B,B, and screw on the cleats H,H,H, etc. Now install top and bottom, following with the shelves and partitions, squaring up the structure by nailing on the back panel of quarter-inch plywood. Note that the small compartment in the middle of the top has a to dowel the joints, as illustrated.

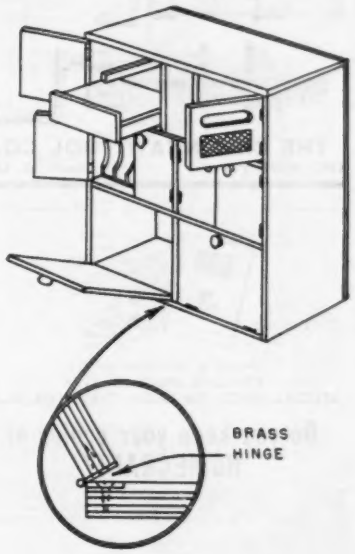
Use finishing nails in the partitions if you do not want to do the rabbeting for them in the shelves. Doors and drawer front are ¾" plywood. Note that the latter is flush with the side and top members when closed. Sides of drawer are ½" material, bottom ⅜" plywood fitted in rabbets. Install friction catches and brass knobs as indicated. Finish in natural grain with shellac or wax.

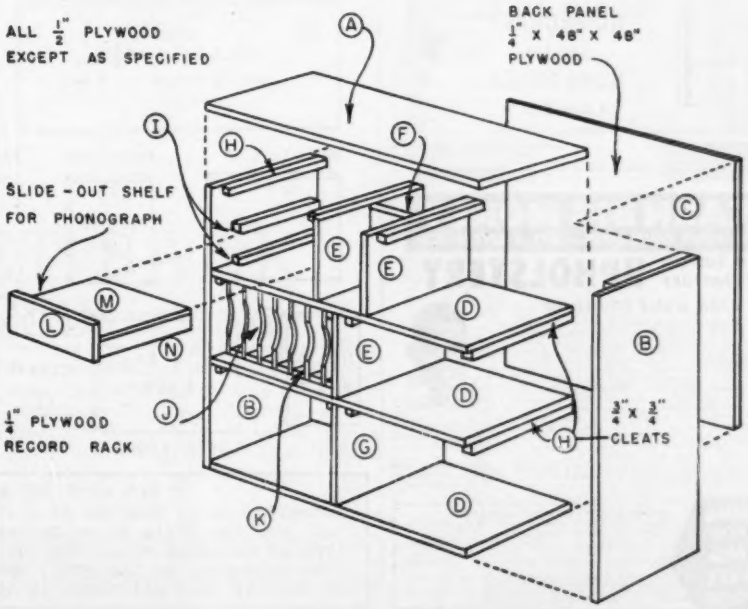


MATERIALS LIST
(For 48" x ceiling height unit)

48 lineal ft. wood of your choice, ¾" x 7½", sides and shelves
1 piece plywood ⅜" x 48" x ceiling height, back
1 piece plywood ¾" x 16" x 46" (allows for trimming) door and drawer front
1 piece pine ½" x 4" x 30" drawer sides, back
1 piece plywood ⅜" x 15" x 7", drawer bottom
12 lineal ft. molding of your choice
2 pairs brass hinges
3 drawer pulls
1 dowel stick 5/16" x 48", or ½ lb. 4d finishing nails
Wood pulp
Shellac or wax







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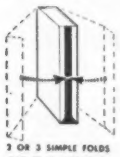

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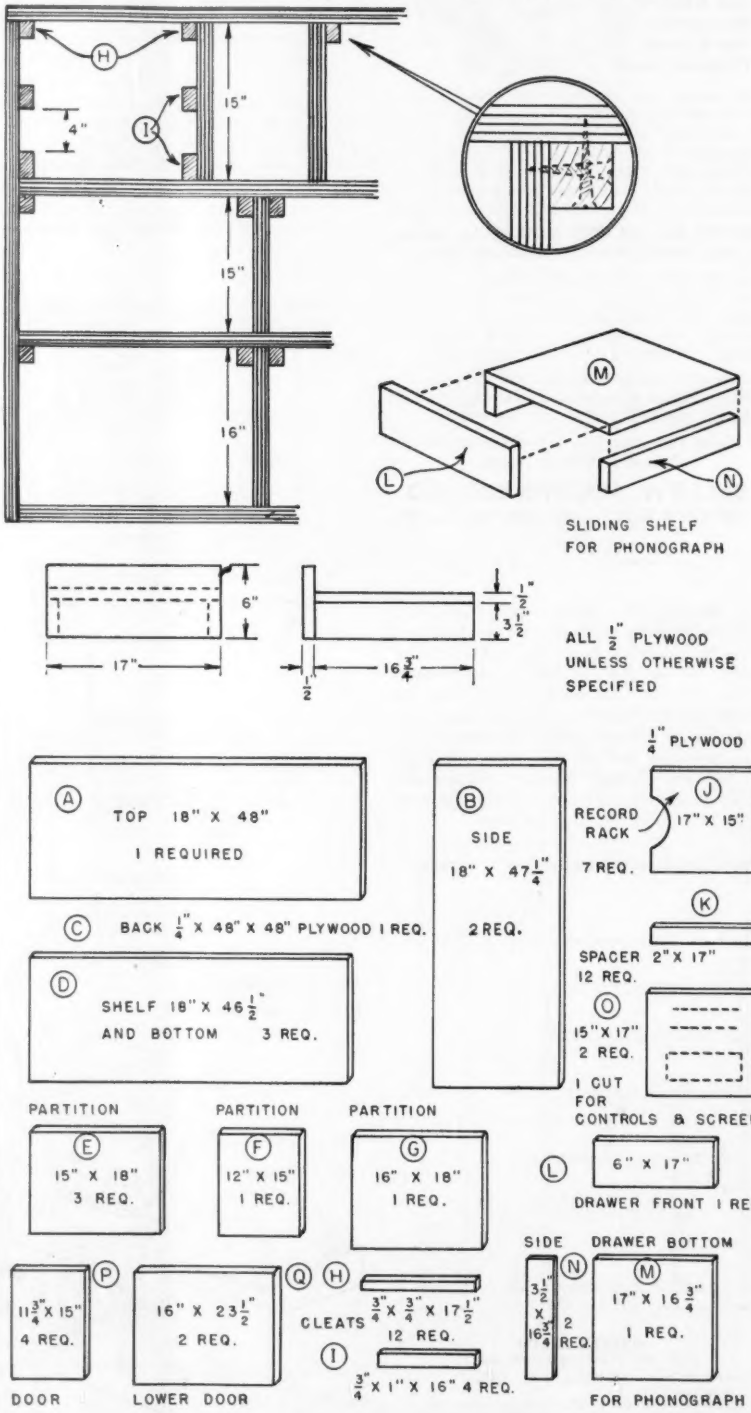
partition F to prevent books from being pushed too far back.

The door on the radio compartment is cut to accommodate the controls of your set, with an opening for the sound which is covered with screen cloth tacked on the inside.

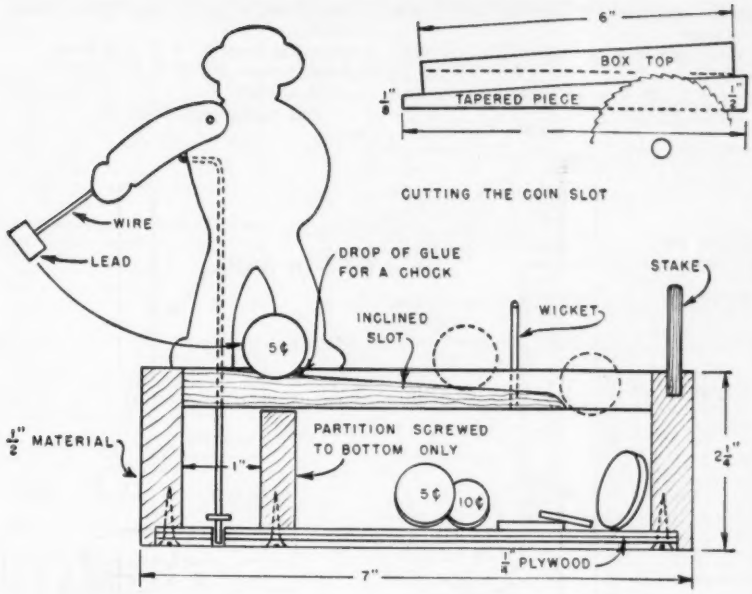
In addition to the plywood specified in the lettered pieces, you will need:

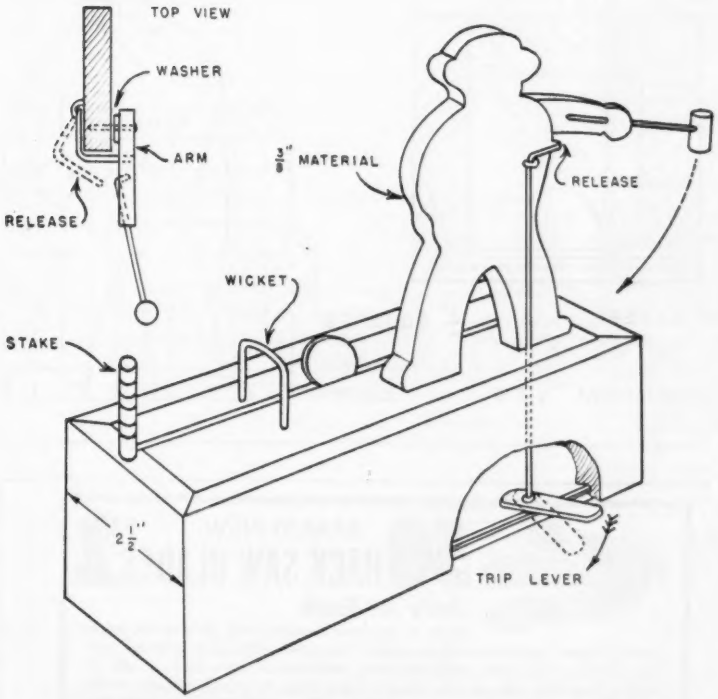
8 pairs of brass butt hinges
8 drawer pulls or knobs
8 doz. No. 9 wood screws
Glue, stain, wax or shellac



DO YOU KNOW THE RIGHT WAY TO SOLDER?

Actually, it is easy to do professional-like soldering. We'll tell you the ABC's of soldering in the next issue, describing typical workshop soldering equipment. If you've shied away from soldering in the past, don't do it any more. Instead, be sure to read all about it in the next issue.





CROQUET BANK

By HI SIBLEY

Place a coin in the groove, trip the lever and WHAM!—it rolls through the wicket and disappears in the bank, not to come out again until Daddy unscrews the bottom.

Make the box of half-inch material with mitered corners and bottom edges rabbeted for the plywood panel, as illustrated. Assemble with finishing nails and glue. Scroll-saw the figure from 3/8" white pine, and make a small lead mallet with wire handle which is set in the wood arm, as shown. The trip lever releases the arm which swings down from the weight of the mallet and strikes the coin with enough force to push it over the small drop of dried glue and on down the slot. Finish the box in natural grain, with the figure in bright colors as indicated in the squared profile.

LIST OF MATERIALS

1 piece hardwood 1/2" x 2 1/2" x 20" box sides
1 piece hardwood 1/2" x 1 1/2" x 6" box top

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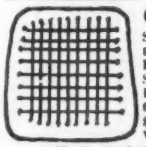

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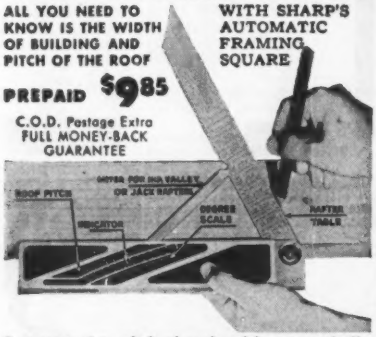

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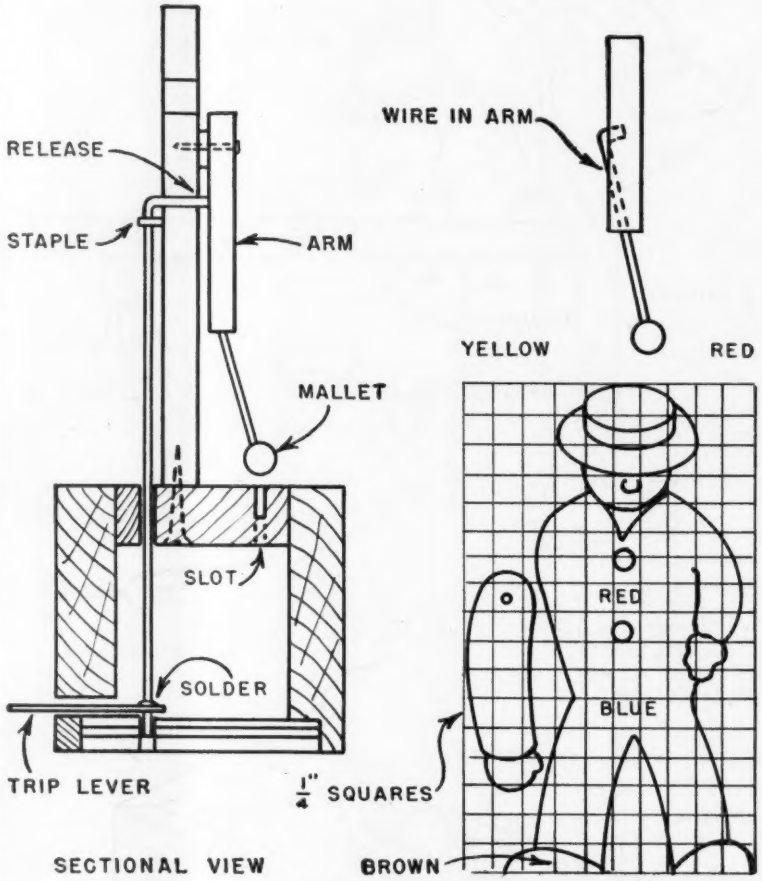
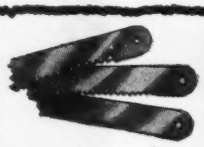
1 piece plywood ¼" x 1½" x 6" box bottom
1 piece white pine ⅜" x 2½" x 4½" figure
1 piece 3/32" wire 10" long, release and mallet handle
1 piece lead ½" x ¼" dia. mallet head.
1 staple
1 piece flat iron, ¼" x 1" trip lever
8 wood screws No. 6 x ¾"
paint, shellac

. . . and there you have it.





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Greenhouses, Sun Rooms

LOW COST GREENHOUSE. Page 223, March-April 1953. 1 photo, 5 sketches. An inexpensive greenhouse that can be built by craftsmen with ordinary carpentry experience.

ROLLING GREENHOUSES Page 306, May-June 1951. A group of drawings showing construction details and dimensions of a small greenhouse on wheels which can be moved about in the garden.

SUN ROOM, PLANT PYRAMID, GREENHOUSE (Hi Sibley). Page 242, March-April 1950. Group of design drawings and photographs, together with brief construction details on these popular garden accessories.

Decorative Projects

YOU'D BETTER NOT KICK THESE TOADSTOOLS! (Dick Hutchinson). Page 250, March-April 1953, 5 photos, detail drawings. Step-by-step directions for making concrete toadstools to turn your garden into a fairyland.

PORCH SHELVES IN MODERN MOTIF. Page 234, March-April 1953. 1 photo, 1 sketch. How to make your porch more attractive by installing modern shelves for potted plants.

RUSTIC SHRINE FOR GARDEN WALL Page 103, November-December 1950. Photograph and drawings. Brief explanation of shrine construction for holding porcelain figure. Illustrated is St. Francis, patron of the birds.

AMERICAN CLIPPER WEATHERVANE (Hi Sibley). Design drawings, brief descriptions telling how to make attractive weathervanes for the garden roof, using duralumin or sheet iron.

OLD FASHIONED CISTERN BOX (Frank Hegemeyer). Page 264, May-June 1952. 8 photographs and 3 construction drawings. Complete description of making an attractive garden pump which actually is storage for garden hose and small tools.

GARDEN POST LAMP (Frank Hegemeyer). Page 272, May-June 1952. 7 photographs and 4 construction drawings. Complete details on how to make a distinctive post lamp, including the metal form and electrical installation.

THESE VANES ARE TOPS FOR YOUR CAMP. Page 305, May-June 1951. A group of weathervane designs for the small home or summer camp. 4 photographs, design sketches.

TOP FOR THE TIP OF YOUR ROOF (Hi Sibley). Page 303, May-June 1951. 6 photographs and a group of drawings showing attractive cupola designs for garage and house roof tops.

Garden Tools

SIMPLE GARDEN TOOL RACK (Hi Sibley). Page 247, March-April 1953. Detail drawings show how to build this inexpensive, easy-to-make rack.

PROTECT SHRUBBERY AND GARDEN HOSE (Hi Sibley). Page 224, March-April 1953. 1 drawing. Here is a way to keep your garden hose from chafing against shrubbery and house foundation.

SIMPLE SOIL SIFTER. Page 242, March-April 1953. Numerous sketches. How to make a soil sifter out of cast-off material.

BUILD A GARDEN TRACTOR-LAWN MOWER FOR $80 OR LESS (Rex E. Howe). 4 photographs, bill of materials, and step-by-step procedure for building combination tractor-lawn mower out of spare parts, using conventional workshop tools.

HOSE CLAMP TOOL (Clinton R. Hull). Page 291, May-June 1952. 4 photographs, 4 drawings, descriptive text explaining how to make a hose clamp tool with multiple garden uses.

Tool and Planting Houses

GARDEN TOOL STORAGE (Hi Sibley). Page 235, March-April 1953. 2 detail drawings. Shows how to store your garden tools safely, using minimum space.

GARDEN LATH HOUSE (Hi Sibley). Page 279, May-June. A series of drawings accompanied by 6 photographs and text which describes how to make various types of low cost lath houses which are essential to the raising of plants that require shade.

TOOL HOUSE FOR THE WELL MANAGED GARDEN. Page 308, May-June 1952. 4 photographs and construction drawings with complete text for making an appendage to the garage for housing lawn mowers and other garden tools and equipment.

HOME GARDEN GREENHOUSE AND POTTING ROOM (Orville Grisier). Page 314, May-June 1952. 5 photographs and numerous drawings with dimensions. Complete text describing design, construction, and proper use.

Gardening Equipment and Methods

FIRST AID FOR WINTER BLASTED LAWNS. Page 209, March-April 1953. 3 photos. Pre-season hints for giving your lawn an early boost toward summer perfection.

A "HATCHERY" FOR YOUR PLANTS (Orville Grisier). Page 244, March-April 1953. 2 pages, Numerous detail drawings. How to construct various types of hotbeds and cold frames.

GRASS ROOTS PHILOSOPHY FOR SUBURBAN LAWNS (J. W. Lentz). Page 289, May-June 1952. The ABC's of developing an attractive and healthy grass lawn.

NEW ZEALAND COMPOSTER (Orville Grisier). Page 292, May-June 1952. 2 photographs, detailed drawings, complete description for building a 3-section compost bin which will appeal to many gardeners requiring fast compost production.

Bird Houses, Feeders, Baths

8 BIRDHOUSE-FEEDER-BATH DESIGNS (Various authors). Page 226, March-April 1949. 14 photographs, 12 detail drawings. How-to-build descriptions for different species of birds.

THATCHED ROOF BIRD HOUSE (Dick Hutchinson). Page 170, July-August 1949. 3 photographs, 2 detail drawings, descriptive text.

BIRDHOUSES FOR PROFIT (Dick Hutchinson). Page 358, July-August 1951. 6 different birdhouses and feeder designs suitable for the home garden. 9 photographs, construction drawings, descriptive text.

REVOLVING BIRD FEEDERS (Dick Hutchinson). Page 148, January-February 1952. 4 photographs, group of detail drawings, tell-how description for making rotating shelter-feeder which weathervanes into the wind for the birds' protection.

"ADD-TO" MARTIN HOUSE (Dick Hutchinson). 3 photographs and a group of drawings accompanied by explanatory text on making an unusual Martin birdhouse.

ONE FOR THE BIRDS (Dick Hutchinson). 7 photographs, 3 drawings, descriptions of several poular bird house and feeder designs.

Playhouse

BUILD A PLAYHOUSE FOR YOUR YOUNGSTER (Harold Jackson). Page 291, May-June 1949. 7 photographs, series of detailed construction drawings. Step-by-step descriptions of building, laying foundation, applying roof.

Fences

A PICTURE FRAME FOR YOUR HOME (Frank Hegemeyer). Page 378, July-August 1952. 7 photographs, detail drawings, descriptions of attractive gate and fence designs to dress up your home exterior.

"JACK-OF-ALL-USES" FENCE Page 293, May-June 1952. Sketch and brief description of portable fences which can be used for various temporary uses about the garden.

FENCE IDEA FOR HOME OWNERS WITH IMAGINATION (Hi Sibley). Page 312, May-June 1950. 9 photographs, 6 drawings, brief design and construction details.

FENCES HAVE CHARACTER (Dick Hutchinson). Page 299, May-June 1949. 2 photographs, group of drawings, descriptions of fences, dimensions, construction details.

Barbecue-Shelters

'A LITTLE BIT OF HEAVEN' IN YOUR OWN BACK YARD (Walt Durbahn). Page 226, March-April 1953. 4 pages, 11 photos, 2 drawings. How to build a patio, kitchen, dining room with benches and a table, a barbecue and Chinese oven—all in an area only 28' x 28'.

COMBINATION OUTDOOR BARBECUE AND FIREPLACE (G. A. Schmidt). Page 257, March-April 1951. 2 photographs, detail drawings, explanation of steps in designing and constructing this picturesque outdoor dining and cooking area.

MINIMUM COST GARDEN SHELTERS. Page 360, July-August 1948. 2 photos, detail drawings, simple procedure.

A BARBECUE CAN BE ATTRACTIVE (Wm. H. Freeman). Page 288, May-June 1948. 2½ pages, 5 photos, 2 detail drawings. Rustic type shelter and barbecue. Construction details for roofed-in shelter, as well as stone work for barbecue.

EQUIP YOUR GARDEN FOR FUN (V. W. Palen). Page 372. July-August 1948. 1½ pages, 6 photos, 2 drawings. Describes outdoor table and concrete fireplace.

Gates and Arbors

A PICTURE FRAME FOR YOUR HOME (Frank Hegemeyer). Page 378, July-August 1952. 7 photographs, detail drawings, descriptions of attractive gates and fence designs to dress up your home exterior.

MORE GATE DESIGNS (Hi Sibley). Page 313, May-June 1950. 4 photographs, 4 drawings, brief construction details.

A GATE SHIELD FOR YOUR HOME (Roberta Fairall). Page 268, May-June 1952. A series of sketches with descriptive texts for monograms in wood, to mount on garden gates.

GARDEN ARBORS Page 270, May-June 1952. A series of design sketches with dimensions and construction details for garden arbors against which to plant or for use as restful havens.

EASY-TO-BUILD ORNAMENTAL GATES (T. Thomas). Page 294, May-June 1948. 1½ pages, 3 photos, 11 sketches, descriptive text.

GRACEFUL GATEWAY WITH LIGHT FRAMING (Hi Sibley). Page 360, July-August 1948. ½ page, 1 photo, detail drawings, simple procedure.

OUT-OF-THE-ORDINARY GATES (Hi Sibley). Page 298, May-June 1949. 5 photographs, six drawings, explanation of types of gates and how to make.

Concrete and Brick Work

YOU NEEDN'T BE AN EXPERT TO MAKE YOUR OWN STONE WALL (Max Alth). Page 202, March-April 1953. 2 pages, 7 photos, 5 drawings. Tells how to construct various types of stone walls; uses and advantages of each.

BUILDING SIDEWALKS (Thomas Andrews). Page 302, May-June 1948. 1⅓ pages, 2 photos, 2 sketches. Procedures for making forms, designs, mixing, cement, laying, finishing.

OLD BRICK FOR PAVING YOUR PATIO. Page 306, May-June 1951. A short piece with sketches explaining how old brick can be laid to form an attractive garden patio, at no cost.

BACK DOOR FOOT SCRAPER—SHOE CLEANER (Walt Durbahn). Page 384, July-August 1951. Construction details of an unusual foot scraper imbedded in the garden sidewalk. Plans also for accompanying outdoor shoe brush.

CONCRETE KNOW-HOW FOR THE HOME OWNER (L. J. Smith). Page 350, July-August 1952. A one-page feature explaining cement mixtures and how to make the forms for simple concrete walks.

CONCRETE KNOW-HOW FOR THE HOME OWNER (L. J. Smith). Page 47, September-October 1952. 4 photographs, explanation of proper procedures for patching garden walks and other sidewalks.

CONCRETE KNOW-HOW FOR THE HOME OWNER (L. J. Smith). Page 116, November-December 1952. Photographs and drawings showing how to make concrete blocks, planting boxes and other forms for the outdoor gardener.

STRAWBERRY WALL. Page 282, May-June 1952. Plans and text describing how to make a wall for growing strawberries, using concrete blocks. Also tells proper method of planting, and care.

HOW TO LAY CONCRETE WALKS (Max Alth). Page 266, May-June 1952. 9 photographs, cross-sectional sketches, step-by-step procedure describing every phase from grading through setting up the forms, making the mixture, to finishing the walk.

Garden Furniture

BIG AND LITTLE GARDEN TABLES. Page 222, March-April 1953. Many detail drawings show you how to build a number of tables—both fancy and plain—for use in your garden.

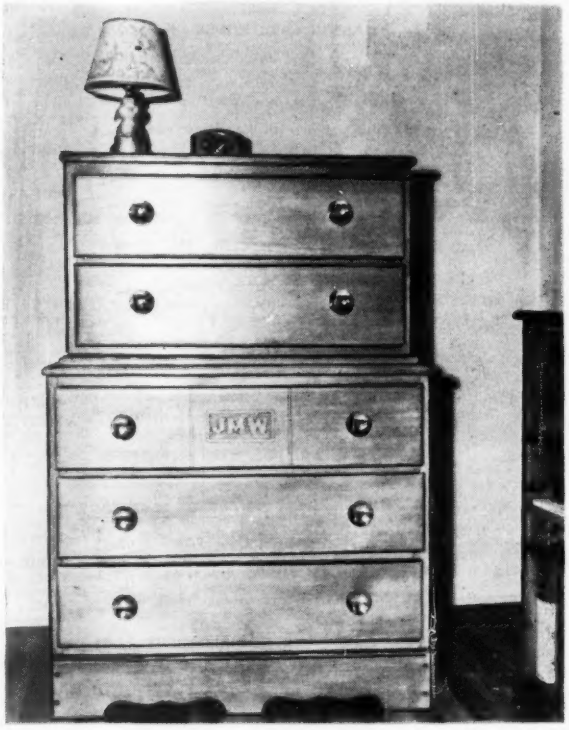
EQUIP YOUR GARDEN FOR FUN (V. W. Palen). Page 372, July-August 1948. 1½ pages, 6 photos, 2 drawings. Describes outdoor table and concrete fireplaces.

CONSTRUCTION CAMP TABLE FOR YOUR BARBECUE. Page 305, May-June 1952. Group of drawings and text telling how to make a 72" long barbecue table with attached benches. Simple construction and pleasing design are featured.

CHEST-ON-CHEST

STEP-BY-STEP

By R. L. WOERNER



THIS chest-on-chest is an ideal project for a small child's room. Since it is not special baby furniture, it may become a cherished possession in the years ahead.

Construction really is not difficult. The tools required are a jointer, power saw, pipe clamps (furniture clamps—36″ capacity), and some hand tools. The original was made without a molding head or dado blade. Both the upper and lower chest are similar in framing, and all drawers are the same height to simplify machine operations.

On each chest the tops and sides are glued up with simple dowel joints. Each set of guides and rails then is glued and nailed together as shown in the exploded construction drawing. While the clamps are being used to assemble these frames, work can progress on the drawer parts.

The simple rabbeted joints shown for the drawers should be adequate, but others may be substituted if desired, making proper allowances in the cutting bill. The ¼″ dado cut for the drawer bottoms was made by "walking" the blade across the required distance.

The top drawer front on the lower chest was carved before assembly. Two shallow saw cuts were made 10″ from each end to define the center panel which may be carved with a bas-relief design or initials.

The drawers are assembled with the joints being glued and nailed. The bottom edge of the drawer back is notched out in the center as shown in the detail drawings of the drawers. Two ¼″ x ¾″ strips of hardwood are glued to the plywood drawer bottoms and nailed with small brads. These strips receive the center hardwood guides and permit the drawers to be opened easily by a one-hand pull on either knob. Rubbing the drawer guides with paraffin permits the drawers to slide easily even when well filled. It is advisable to provide all drawers with a suitable stop such as a small wood turnbutton on the drawer back to prevent the drawer from coming out of the chest accidentally.

The drawer fronts, tops and bases of each chest were rounded on the edges before assembly. A shaper or moulding head may be employed, but a hand plane, wood rasp, and sandpaper sufficed for the original.

When all the frames have been glued up, the chests can be assembled. Boring all of the holes for the wood screws in advance (as indicated on the cutting bill) will speed up the assembly. Frames are glued in place and secured with wood screws as shown in the exploded detail, taking care to keep the rails flush with the front edge of the sides. The tops and bases are added to complete the chests. A simple pattern was traced on the base of the bottom chest and cut out with a coping saw before assembly. This base was glued to the bottom rail and secured with nails driven through the rail from the back. The through dowels are driven into the holes bored at the ends of the base and left projecting slightly for ornamentation.

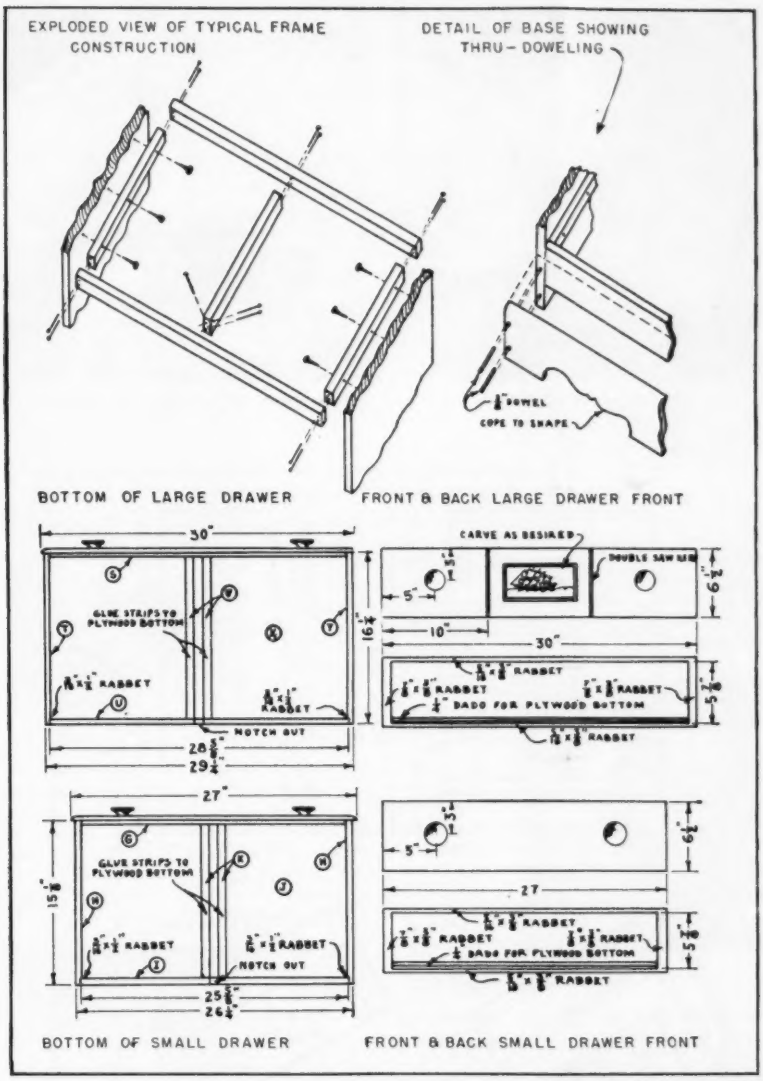
A back of ¼″ plywood may be added to keep out dust and to strengthen the unit. The ⅜″ x ¼″ rabbet cut into the back edges of the sides will receive the back.

Top and bottom chest are fastened together with screws. As an alternate method, mending plates may be used to fasten the two parts at the back only, so they may be easily separated for moving.

The finish is optional, of course. In this case the chest was stained maple to match a child's bed. It was then given two coats of resin sealer and waxed. When the child is older, the wax will be removed and the chest given several coats of varnish. The insides of the drawers should be given two coats of the resin sealer to make them easier to clean. The inside surfaces of the top and sides of each chest also should be sealed to prevent warping of the wide surfaces.

★ *Very tall radio masts of built-up tubular plywood have proven successful. One weighing 250 pounds replaced a 1,000-pound steel mast. Besides being rust-proof and rot-proof they are impervious to rain, wind, tropical heat, and sub-zero cold.*

★ *At hatcheries, beech and alder sawdust make satisfactory roughage in fish's diet.*



(Continued on page 374)

FIX IT YOURSELF

(Continued from page 329)

Q. Is there anything that can be done to remedy a warped door?

A. This is difficult to do if the door is badly warped. If not it sometimes can be helped by installing an additional hinge halfway between the original two. Before you unhinge the door close it and mark for the new hinge mortising horizontally across on both the edge of the door and the jamb. Mark for the top and bottom by holding the new hinge against the wood. The mortise depressions, when cut must extend just far enough across the edge of the door and into the jamb so that the center line of the pin in the new hinge will be exactly in line with the centers of the original hinge pins.

Q. How is an exterior door made?

A. The frame usually is built of fairly heavy pieces and filled in with panels of lighter wood. There are at least two stiles or vertical pieces and two rails or horizontal pieces. The stiles extend from top to bottom and the rails are tenoned into the stiles. A piece of wood is first glued into the stile or rail and to this piece are glued the panel mouldings after the panels have been put in place. The mouldings should not be fastened to the panel itself because the panel should be free to move as it shrinks or swells, otherwise it will crack.

Q. How can efflorescence be removed from basement walls?

A. Scrub with plain water and a good stiff brush. If this does not remove it, try 1 part hydrochloric acid to 9 parts water. Wash thoroughly with water before and after the acid is used. Protect hands.

Q. Should old plaster walls be washed before painting?

A. Wash with soap and water to which a little ammonia has been added. Rinse and allow to dry thoroughly before painting.

Q. Can cabinet doors be built of solid wood or would they shrink too much to make it practical?

A. The doors can be made of solid wood if they are set in frames, otherwise plywood is better for this purpose.

Q. How can I remove paint from the basement walls?

A. If the paint has a water base, soak well with water and with a very wet sponge wipe off the paint. A wire brush will speed removal. If the paint has an oil base use a commercial paint remover.

Q. Should a new paint brush be treated before using?

A. It should be soaked in linseed oil for about twenty-four hours. Press the excess oil out before using.

Q. What are the steps in refinishing an old floor?

A. 1—Check for exposed nail heads, squeaks, rotted boards and buckling. 2—Sand using first fine and then coarser sand paper. 3—Apply two coats of shellac, varnish or floor sealer. If varnish is used apply a sealer first thinned with turpentine. Finish with wax.

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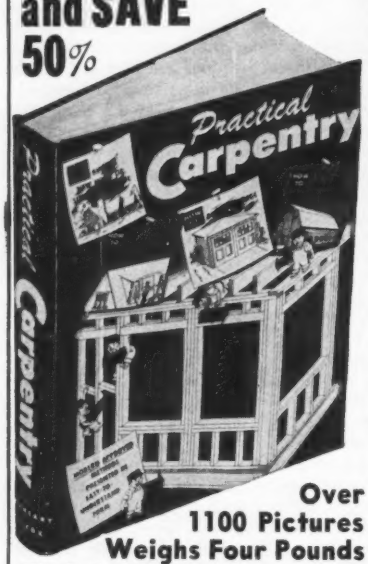

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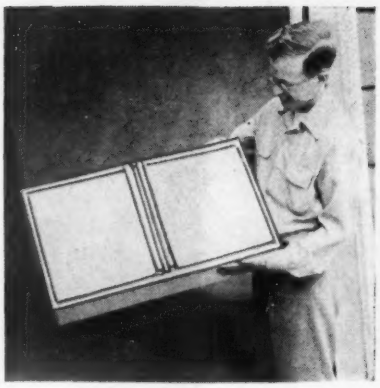
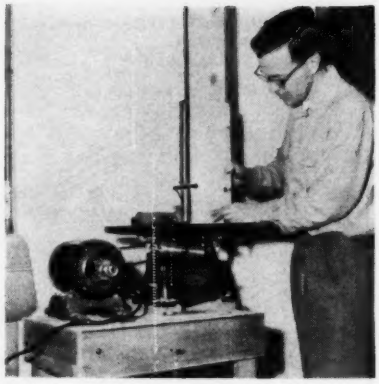
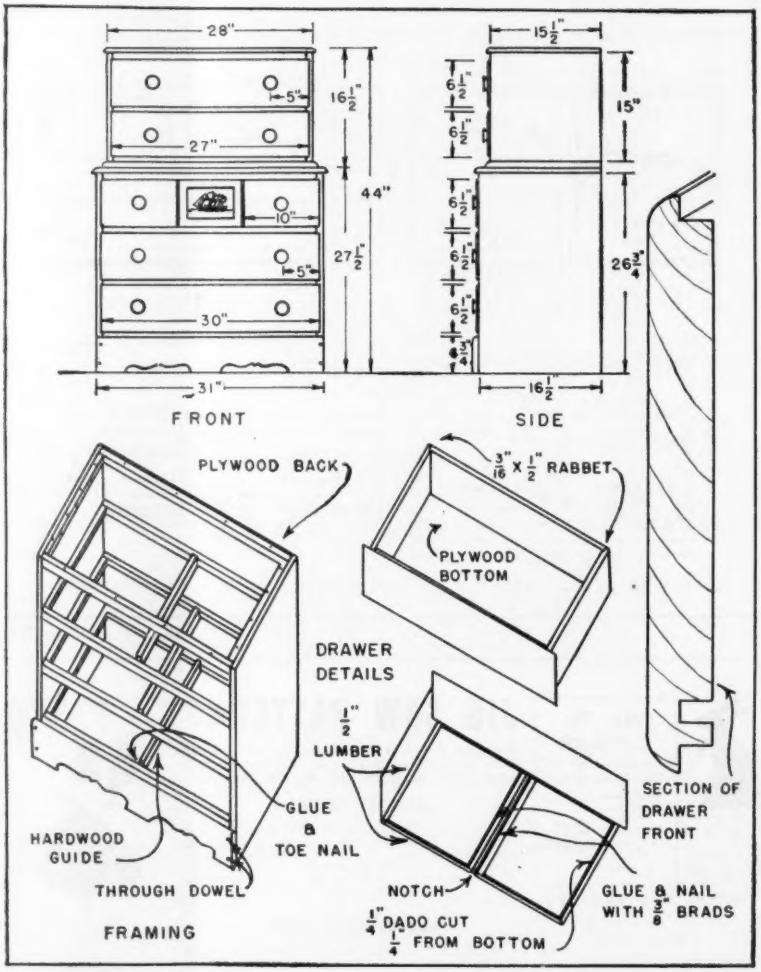


Details of drawer bottom.



Cutting rabbet with tenoning jig riding on the saw fence.



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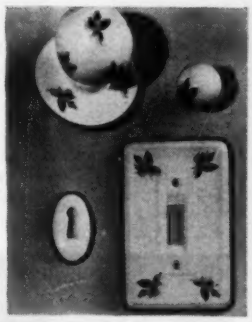

New line of hand decorated porcelain hardware by Yale & Towne includes matching door knobs, drawer pulls, electric light wall switch plate, and keyhole cover (clock-wise from upper left as shown here). Yale Decor line comes in twelve styles, ranging from traditional to modern, and are at gift and department stores. The Yale & Towne Mfg. Co., Chrysler Building, New York 17, N.Y.

Anti-Drip Toilet Tank Kit

A non-absorbent Styrofoam toilet tank liner which you can install easily forms a perfect insulation barrier between the cold water and the porcelain. The Jaylite liner can be applied to any style or size tank. Kit contains everything necessary to install the liner. Price $3.95 plus 50c for postage and packing. The Jaye Corp., 1012 Third St., Watertown ET-86, Wis.

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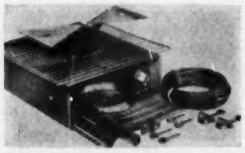
Do-It-Yourself Bathroom Unit

A new fiberglass shower door that can be installed on any recessed tub in a matter of minutes, has been introduced by Ludman Corp., North Miami, Florida. Simple to assemble and install; all it needs is a screwdriver. Fair traded at $69.95. Shatterproof fiberglass will not warp, mold or mildew. Jambs and door panel frames cushioned with sponge rubber strips. Nylon rollers at top and bottom.

Improved Aluminum Step Stool

R. D. Werner Co., Inc., has brought out a step stool with a red Fiberglas top, which provides a more attractive unit for the home. Another improvement is the non-pinching spreader bars which lock the legs into open position. Built to hold four times the usual work load, yet weighs under 6 lbs. Price $9.95. R. D. Werner Co., Inc., 295 Fifth Ave., New York 16.

TV Antenna Kits



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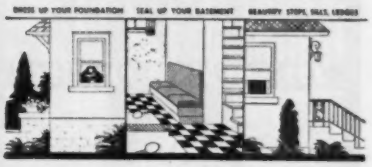

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HOME OWNERS' *Shopping Column*

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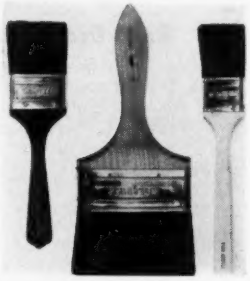
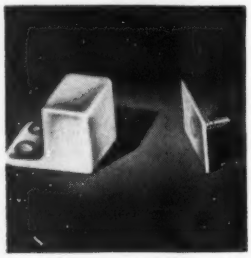


Designed especially for the do-it-yourself market, this 3-brush kit is suitable for every need in painting walls, floors, ceilings, furniture, trim, etc. Brushes are made of pure bristle, vulcanized in hard rubber and with lacquer finished handles. Kit contains 4" wall brush, 2" varnish brush, 1½" flat sash brush. Complete kit $2.98. Aardvark Brush Supply Co., Dept. P55, 242 East 58th St., New York 22, N.Y.



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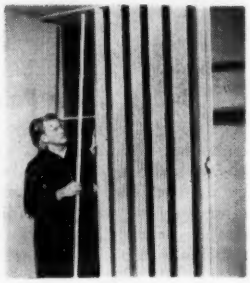
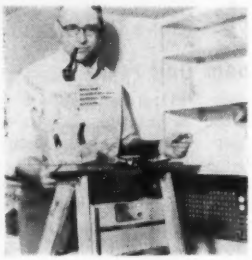


If you've a corner going to waste where you can use storage space, and if funds are limited, you might consider low-cost folding basswood-slat doors. A couple of shelves, vertical dividers and backing plus this new basswood-slat accessory, and you have it. These inexpensive doors are easily installed; you apply strips of pre-drilled molding to anchor the side of each door to the wall. Hough Shade Corp., Janesville, Wis.



Kitchen Cabinet Booklet

Republic Steel Kitchens' booklet outlines step-by-step modernization of outmoded kitchens, combining simplicity of instruction with well-illustrated details, for the amateur. The booklet tells what tools are needed for the job. Each step is detailed, from removal of old cabinets and baseboards to construction of soffits, or ceiling drops. Republic Steel Kitchens, Canton, Ohio.

New Paint Remover

TM-4 paint remover washes away paint, enamel, lacquer, varnish, shellac, resin emulsion water paints, rubber based paints, synthetic finishes. Is flowed on with a full brush. TM-4 and clean water will remove the finish from most surfaces in 30 seconds to 30 minutes, depending on the number of coats of paint to be removed. For further information write to Winfield Brooks Co., Inc., Woburn, Mass.

Floor Drain Stopper

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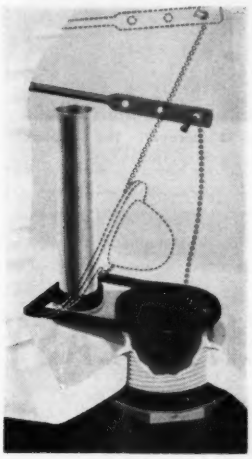
HOME OWNERS' *Shopping Column*

Handbook on Sealing Leaks

A new 48-page repair handbook showing in detail methods for a wide range of repairs has been announced by Smooth-On Mfg. Co. Text and illustrations present repair methods for leaks in pipes, boilers, radiators, concrete and cinder blocks and sheet and plate metal; also how to tighten loose parts in metal, wood or plastics. Copies free from Smooth-On Mfg. Co., 570 Communipaw Ave., Jersey City, 4, N.J.



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Catalog of Do-It-Yourself Furniture

A complete line of furniture, plywood, and lumber for the workshop are featured in the new profusely illustrated Habig Mfg. Co. catalog. Describes 23 furniture kits; gives characteristics, specifications, prices of 11 popular woods. Kit descriptions contain photos, specifications, dimensions, prices. Available from Habig Mfg. Co., Inc., P.O. Box 187, Jasper, Ind.

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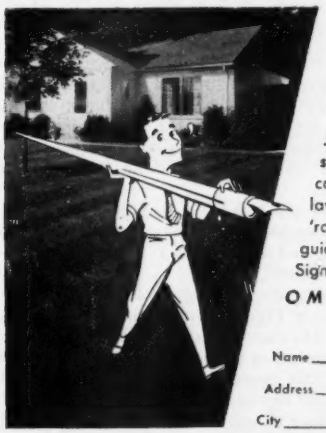

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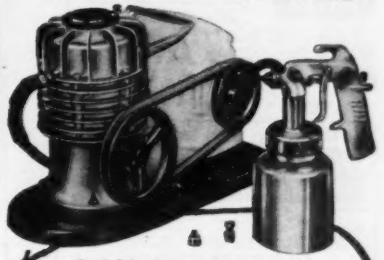

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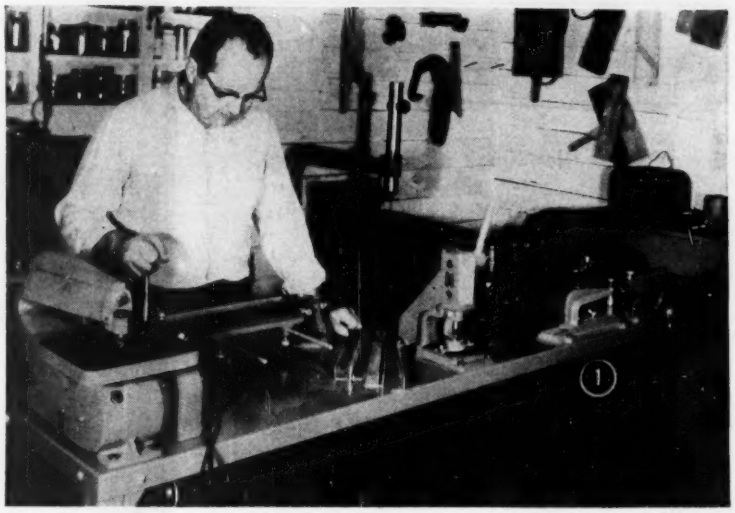

Fig. 1—Bending 2" wide strips of aluminum in the center, on the 12" breaker. The complete metal working bench set-up is illustrated here.

New Equipment

MAKES METAL WORKING EASY

By DICK HUTCHINSON

Associate editor

Latest development to popularize metalcrafting is a new, complete metal working shop. It is set up on a steel bench 18" wide by 5' 8" long. This 12" shop is small enough to fit into any home workshop, yet large enough to handle virtually all the jobs necessary in any small professional shop. The machines are listed in two sizes: a 12" shop, and a 24" shop.

Their prices are low enough so that most of us can afford the complete shop. However, if necessary to equip a shop on a limited budget, the machines may be purchased one at a time. The complete 12" shop is shown in operation in Fig. 1.

We are illustrating here a number of the simpler metal projects that can be made by hand, but which are made much faster and much more accurately on the machines. In working out these projects, in most cases, we used plain soft sheet aluminum. The aluminum pieces may be hammered if desired, and any one or all of the pieces shown may be made of the same gage soft sheet copper, plain or hammered. If the equipment is not available, and the pieces are to be cut out by hand, clamp one handle of the tin shears in the vise as shown in Fig. 2, for greater leverage and more accurate cutting.

Let's begin by making the napkin ring. This is made from a plain piece of 20-gage soft sheet aluminum. An initial may be cut in, as shown in the drawing Fig. 3, or the piece may be left plain. The edges are filed smooth, then the ring is rolled into shape in the slip roller, or around a 1" steel bar. The finished ring is shown in Fig. 4. Of course, the ring may be made from copper or from 20-gage nickel silver. They're just as nice as solid silver.

The simple letter holder, Figs. 5 and 6, is made from either aluminum or copper and is processed in the same manner, except that the rings are rolled in from each end. This is an ideal piece for the desk, to hold envelopes and unanswered letters.

The novel pencil holder shown in Fig. 6 and detailed in drawing Fig. 7 can be made in a few minutes. The complete roll is made first, after which just a slight roll is made in the front, as in Fig. 8 where the piece is being formed in the slip roller. Copper also may be used for this.

The tooth pick holder shown in drawing Fig. 9, and finished in Fig. 4, should be laid out on the 20-gage aluminum. It may be cut out on the powered nibbler, with the shear blades set up in the hand press, or it may be done with the tin shears.

Roll the tips of each of the four sides back as shown in the slip roller. Drill, form, and rivet with 1/16" R. H. aluminum rivets.

The paper napkin holder detailed in drawing Fig. 10, and pictured finished in Fig. 11, also is simple. Make it out of aluminum or copper. Cut out, then trace the little Scottie on the face at each end, and cut in the detail as shown. Roll out the tops of each end slightly in the slip

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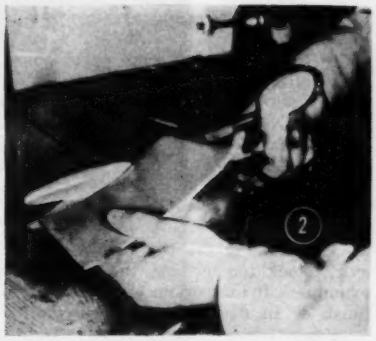


Fig. 2—Clamping one handle of the tin shears in the vise provides greater leverage. It also allows more accurate cutting by hand.

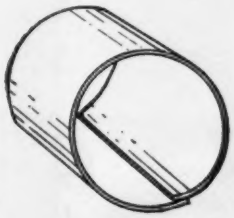
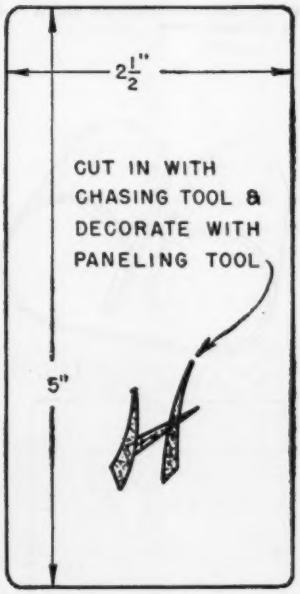


FIG. 3

ROLLED NAPKIN RING



BLANK FOR NAPKIN RING.
20 GAGE ALUMINUM

roll, then bend—as indicated—in the breaker. This piece done in copper is nice enough to be used on the desk, as a letter holder.

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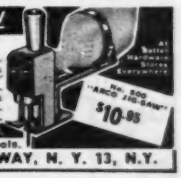

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First, scribe a circle the size of the bottom of the inside of the tray you want to make, on a piece of maple ¾" thick. Adjust the jig saw to cut at a 75° tilt, then saw out the block and sand it smooth. Now saw a second 75° beveled disc ¼" smaller on the larger diameter, than the smaller diameter of the first block. Use ⅜" maple. This completes the set of forming dies.

When cutting the copper or aluminum disc for making the tray, allow enough extra stock for forming the sides. For example: If the bottom of the tray is to finish 4" in diameter, and you want a ½" raised side, cut the disc 5" in diameter. This will give you a 4" tray ½" deep. Cut out the disc on the disc shear, as shown in Fig. 13.

If you are making aluminum coasters or trays, set the disc between the two blocks, as in drawing Fig. 14. Clamp in the vise as in Fig. 15, and hammer down evenly all around. Remove, and file even and smooth. A 20-gage aluminum coaster can be completely formed in the wood dies in about two minutes.

When hammering copper trays like the ones shown in Fig. 16 it will be necessary to remove them from the dies. Place on the anvil, and hammer out the kinks from the inside before completing the forming.

Copper, being a little harder metal, does not compress as readily as aluminum does, which causes the metal to kink somewhat. If the trays are to be finished with a hammered surface, hammer before forming. With wood dies of the proper sizes, trays in sizes all the way

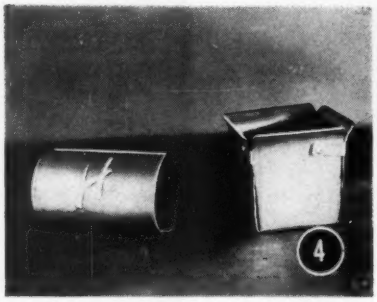


Fig. 4—The completed aluminum napkin ring and the toothpick holder.

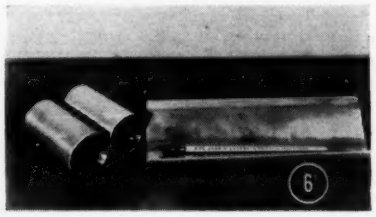


Fig. 6—The finished pencil tray and letter holder.

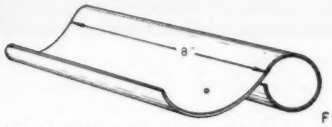
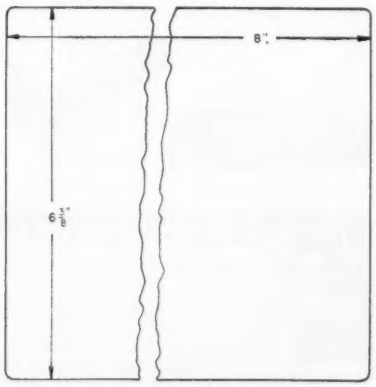
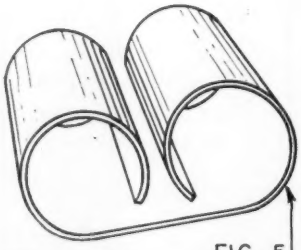


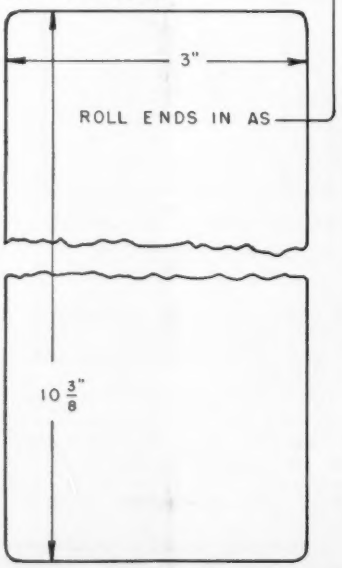
FIG. 7
ROLL ON SLIP ROLL OR AROUND 1" ROUND BAR



BLANK FOR ROLLED PENCIL TRAY, 20 GAGE ALUMINUM



LETTER HOLDER FIG. 5



LETTER HOLDER BLANK FROM 20 GAGE ALUMINUM

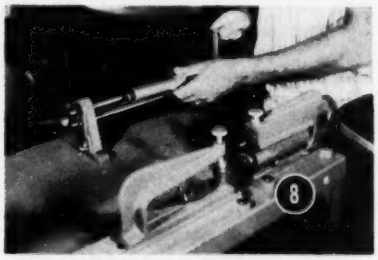
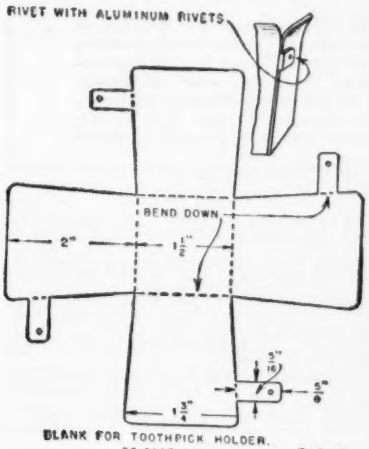


Fig. 8—Rolling the pencil holder in the 12" slip roll. It is rolled complete in about one minute.

from simple ¼" deep coasters, on up to trays as large as pie tins, may be made.

To finish aluminum pieces, remove slight scratches, and restore its silvery appearance, dip a soft cloth into fine (15 M) carborundum powder and rub gently over the surface. Use a rotary motion.

A rich finish on copper may be obtained by rubbing over the surface gently with fine steel wool. If a high polish is desired, buff on a power buffing wheel. In any case, apply a coat of transparent lacquer.



BLANK FOR TOOTHPICK HOLDER. 20 GAGE ALUMINUM

FIG. 9

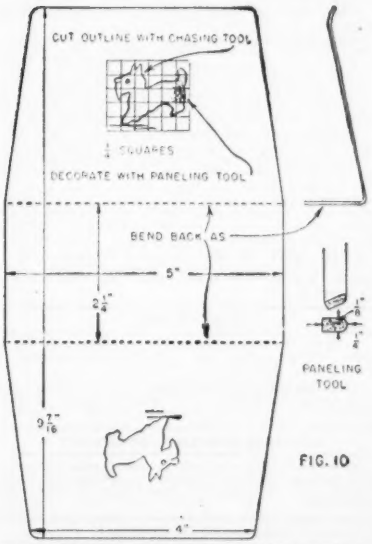


FIG. 10

BLANK FOR PAPER NAPKIN HOLDER 20 GAGE ALUMINUM

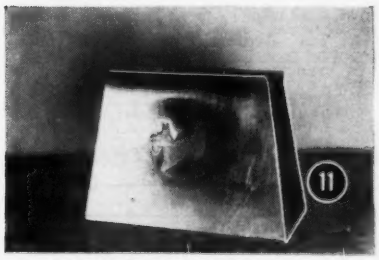


Fig. 11—Completed aluminum paper napkin holder.

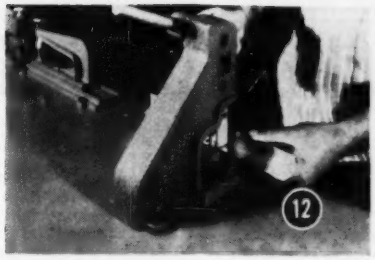


Fig. 12—Punching holes with the hand punch, for riveting. It is fast and accurate, leaves no burrs.

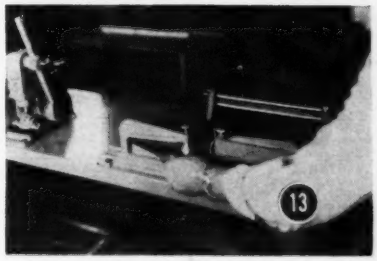


Fig. 13—Cutting discs for ash trays on the disc and ring shear. One turn of the handle completes a perfect disc.

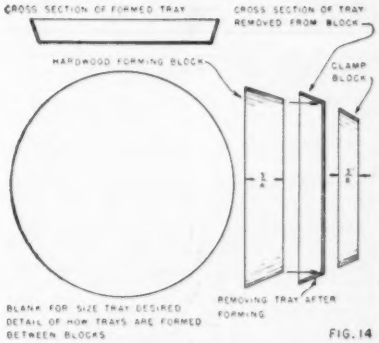


FIG. 14

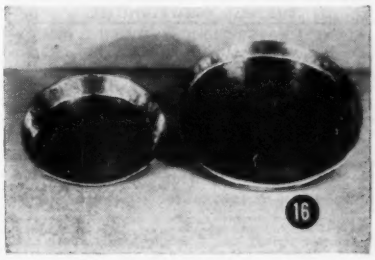


Fig. 16—Two copper trays formed between hardwood blocks.

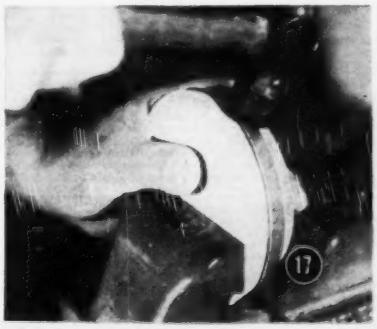


Fig. 17—Forming a round copper ash tray between two hardwood blocks.

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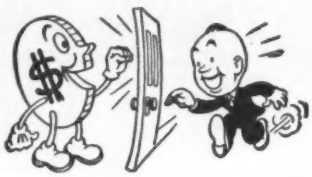

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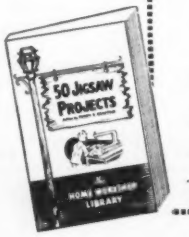

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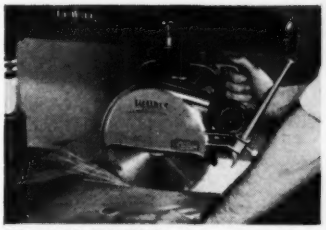
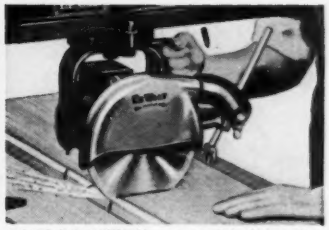
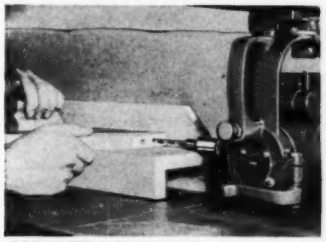


TOP-SIDE CUTTING! No guesswork—no mistakes. You always see the cut because layout marks are visible and easy to follow.

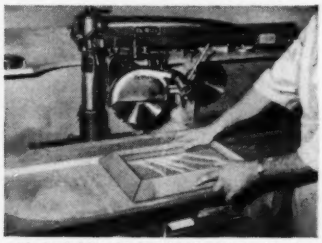
PROFESSIONAL ACCURACY! Calibrated scales for miter, bevel and rip are visible above table. Instantaneous settings!



EASY TO USE! You control ball-bearing travel head in radial arm. Moves smoothly, precisely. All cuts perfect—no spoilage.



COMPLETE VERSATILITY! One powerful direct-drive motor accommodates any tool—gives full "3-D" 360° flexibility.



NO FLOOR SPACE NEEDED! Builds into your workbench! When not in use, radial arm swings conveniently out of way.

PLUS BIG CAPACITY and many more extra-value features—all explained in FREE WOODWORKING BOOKLET

De Walt Inc. Lancaster, Pa.

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POWER SHOP

IN CANADA:
De Walt Canada Ltd., Guelph, Ontario
Another product of AMF . . . better by design

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☐ Please send me free illustrated booklet showing how your Power Shop makes me a woodworking expert, saves money in my home.

☐ Please send me free blueprint "Building A Home Workbench."

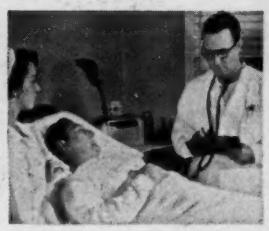
Name_____

Address_____

City_____ Zone____ State_____

MONEY FOR YOUR DOCTOR

Under the WHITE CROSS PLAN you can enjoy the peace of mind of knowing that you are protected against doctor bills.



MONEY FOR YOUR HOSPITAL

One person in every two families will need hospital care this year. Don't let a big hospital bill wreck YOUR family's savings.

MONEY FOR YOUR SURGEON

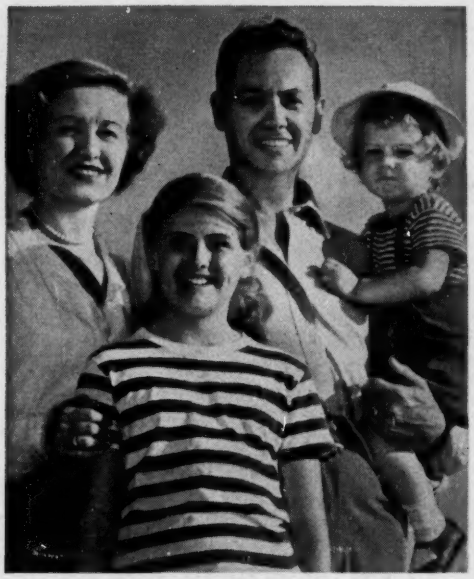
6 out of 10 hospital patients require surgery—usually a sizable expense. So why not protect yourself the sensible WHITE CROSS way?

MONEY TO LIVE ON

It's awful to have household bills pile up—*with no money coming in!* WHITE CROSS helps you avoid this worry, get well faster.

For only a few pennies a day--

MY WHOLE FAMILY IS PROTECTED



3 out of every 5 families in the U.S. are now protected against high cost of hospital care. Your family should be, too.

under the Famous, Low-Cost

WHITE CROSS PLAN

No Red Tape—You Don't Have to Join a Group or Be Examined

Take All or Any Part of the Plan

PAYS UP TO $150 FOR DOCTOR BILLS—Choose any doctor you want. Visits can be in your home, his office or hospital. Benefits begin with first treatment for injury, third treatment for sickness. (P89)

PAYS $4 TO $15 A DAY FOR HOSPITAL—Up to 100 days for each different sickness or accident, for each member of family. We pay hospital or you, as you direct. Use any hospital. (P85)

PAYS MATERNITY BENEFITS—Under the WHITE CROSS PLAN you can get (after you have been a policyholder for nine months) up to $50 under the medical-surgical policy for childbirth or any complications of pregnancy, or miscarriage—and up to *10 times* the daily rate in your hospital policy. (P89-P85)

PAYS UP TO $200 A MONTH FOR RENT AND GROCERIES—When disabled and unable to work you can get $50 to $200 a month just for household expenses. Payable while in hospital or recuperating at home. For full year if necessary. (P16)

PAYS SPECIFIED AMOUNTS FOR "EXTRAS"—Full cost of operating room and anesthetics; specific sums for X-rays, drugs, dressings, ambulance, oxygen and other hospital services. (P89-P85)

PAYS $5 TO $250 FOR SURGERY—Choose any surgeon you wish. Fractures, sinus, hemorrhoids, mastoids and many more are covered . . . even stitching a bad cut ($5). Policies set forth exact amounts allowed for various operations. (P89-P85)

Cash benefits above are only a condensed outline. All benefits, liberal terms, conditions clearly stated in policies. Accident benefits begin immediately from policy date. Sickness benefits cover all illnesses originating after policies are in force 30 days, except those few specified in policies. Read policies carefully.

BANKERS LIFE & CASUALTY CO. · THE WHITE CROSS PLAN

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MAIL THIS COUPON AT ONCE FOR FREE INFORMATION

BANKERS LIFE & CASUALTY CO., Dept. HO-7,
4444 LAWRENCE AVENUE
CHICAGO 30, ILLINOIS

Send me all the facts about the famous *low-cost* WHITE CROSS PLAN issued by BANKERS LIFE & CASUALTY CO. This does not obligate me in any way.

Name .....
(PLEASE PRINT)

Address .....

City ..... County or Zone..... State.....

BANKERS LIFE & CASUALTY CO. CHICAGO 30, ILLINOIS